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WHO ARE THE AMERICAN INDIANS?*

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When Columbus discovered America he discovered not only a new continent but a new people—the American Indians. From one end to the other of its broad expanse the continent was occupied by Indian tribes that had held the land from time immemorial—so far at least as their own traditions aver—knowing nothing of any country but their own. The commonly presented picture of the Indians as they appeared at the time of the discovery is that of a horde of wandering savages, half or wholly naked, living on roots and herbs, or existing by the capture of wild animals scarcely more savage than themselves, and the chief objects of whose existence was to enslave, to torture, and to kill each other. Those who hold such opinions have ever taken a hopeless view of the Indian's present and a still more hopeless view of his future. Such a picture conveys a totally false impression of the Indian and of the state of culture to which he had attained at the era of the discovery. Though still living in savagery, he was in the upper confines of that estate and was fast pressing upon the second stage of progress, that of barbarism—that is to say, he had progressed far beyond and above the lowest states in which man is known to live, to say nothing of the still lower conditions from which he must have emerged, and had traveled many steps along the long and difficult road to civilization.

Already he had become skillful in the practice of many arts. Though the skins of beasts furnished a large part of his clothing, he

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had possessed himself of the weaver's art, and from the hair of many animals, from the down of birds, and from the fibers of many plants he knew how to spin, to weave, and to dye fabrics.

Basket-making he had carried to so high a degree of perfection that little further improvement was possible.

The potter's art also was his, and though his methods were crude and laborious the results achieved, both as regards grace of form and ornamentation, may well excite admiration at the present day.

Copper had been discovered and was mined and roughly beaten into shape to serve for ornament and, to some slight extent, for mechanical use. In Mexico and Peru gold, silver, and copper were worked, and many authors contend that the method of making bronze, an invention fraught with tremendous possibilities, had there been discovered.

In much of South and Central America, Mexico, and the eastern parts of the United States so important an advance had been made in agriculture that it furnished a very large part of the food supply, and it should not be forgotten that the chief product of the Indian's tillage, maize or Indian corn, which to-day furnishes a large part of the world's food, was the gift of the Indian to civilization. A scarcely less important contribution to mankind is the potato, the cultivation of which also originated with the Indians. A third important agricultural product, though less beneficial, is tobacco, the use and cultivation of which had been discovered centuries before the advent of the European.

Architecture may seem like a large word to apply to the dwellings of the Indians. Nevertheless many of their houses were more substantial and comfortable than is generally supposed, while in the Northwest many tribes reared dwellings of hewn planks, sometimes as large as 210 feet long by 30 feet wide, which were capable of accommodating several hundred individuals. More pretentious and durable were the communal houses of mud and stone reared by the pueblo people of Arizona, New Mexico, and Mexico, while further south, in Central and South America, were edifices of hewn stone, which from their dimensions, the size of some of the blocks contained in them, and the extent and ornate character of the ornamentation, justly excite the wonder and admiration of the traveler and archæologist.

The advantages of a beast of burden had been perceived, and though the human back furnished by far the greater part of the

transportation, yet in North America the dog had been trained into an effective ally, and in the Andes the llama performed a similar office. Insignificant as was the use of the dog as a carrier, its employment cannot well be overestimated as a step in progress when it is remembered that the plain's tribes that most employed it lived in the midst of the buffalo, an animal which must have become of prime domestic importance in the never-to-be-enacted future of the Indian.

The need of some method of recording events and communicating ideas had been felt and had given rise, even among the ruder tribes, to picture-writing, which in Mexico and Central America had been so far developed into ideographs, popularly called hieroglyphics, as to hint strongly at the next stage, the invention of a true phonetic alphabet; nay more, the Mexicans and Mayas are believed to have reached a stage of true phonetic writing, where characters were made to represent not things, as true ideographic writing, but the names of things and even of abstract ideas; and this is a stage which may be said to be on the very threshold of one of the proudest achievements of civilization, that of a phonetic alphabet.

Instead of living in an unorganized state, where each man was a law unto himself in all things, the Indians lived under organized forms of government, rude enough indeed when compared with the highly organized system of civilized nations, but marking an essential advance on the conditions attained by savage peoples in other parts of the world. The chieftaincy was transmitted by well-understood laws or, as in some tribes, was more purely elective. Their social system was very ingenious and complex, and, being based largely upon kinship ties, was singularly well fitted for the state to which they had attained, of which indeed it was simply an expression and outgrowth. In many sections a considerable advance had been made in political confederation, and neighboring tribes combined for defense and to wage war against a common enemy. They had invented many and singularly efficient laws to repress and punish lawlessness against the individual and the social body, and as a consequence they enjoyed almost entire immunity from theft and many other crimes.

The development of religious ideas among our Indians is a curious and instructive study. Though the Great Spirit and the Happy Hunting Ground which missionaries and theologians thought they had discovered among them are now known to have had no existence, the Indians had by no means reached the state of culture in

which they were found without developing religions. Their gods or fetishes were innumerable, their priests endowed with immense influence, and their ceremonies of devotion and propitiation were as devout as they were elaborate. The precision of the beliefs of many tribes and the elaborateness of their rituals are simply astonishing. Thus their advance in the domain of religious thought equalled, if it did not surpass, their progress in some other directions.

If by medicine we mean the rational treatment of disease, the Indian can be said to have learned only the rudiments of the healing art. Medicine, in so far as it was a distinct profession, was almost wholly in the hands of the Medicine Man or Shaman, who filled the two-fold office of priest and doctor. Neither the theory nor the practice of the Shaman had in it anything that was rational and very little that was efficacious, except through the influence exercised over the mind of the patient, in other words, except so far as the Shaman was a faith-curer. Whatever that is marvelous in the modern cases of faith cure can be more than matched out of the practice and experience of the Shaman, who learned his trade long before the European came to these shores. He who would see the Indian Shaman need not seek the wilds of the Far West. He may find his counterpart on Pennsylvania avenue. The whole medical practice of the Indian Shaman was based upon the idea that all disease was the effect of evil disease spirits that had obtained lodgment in the body, or that it was caused by witchcraft, and so long as practice was directed to the dislodgment of these spirits no rational treatment was possible. I am aware that the above idea of Indian medicine is contrary to popular belief, which to some extent at least is in harmony with the claims of alleged Indian doctors of white extraction who claim to have derived their skill and their herbs directly from the hands of Indian experts. Recent and carefully conducted investigations on this subject, however, fully substantiate the above statements. Though roots and herbs were employed in the treatment of nearly all diseases, they were chiefly used as adjuncts to the charms and sorceries of the medicine man. Often they were not given to the patient at all, but were taken by the medicine man to heighten his power over the disease spirits. Often they were applied by being rubbed on the body of the patient or by being blown in the shape of smoke on the afflicted part.

Among the Indians was found flourishing to a remarkable degree the so-called doctrine of seals or signatures. A few examples of

the doctrine derived from the eastern Cheroki by Mr. James Mooney may prove of interest. Doubtless you are all familiar with the cone flower. The Cheroki call it deer eye, and from its fancied resemblance to the strong-sighted eye of the deer and its connection by name, for the Indian believes that there is a potent connection between the name of a thing and the thing itself, it is used as a wash for ailing eyes.

The common purslane (*Portulaca oleracea*) is used as a vermifuge, because the red stalk looks like a worm.

An infusion of the roots of the hoary pea (*Tephrosia virginiana*), called devil's shoe-strings in the South because of their toughness, is used by the Cheroki ball-players as a wash to strengthen their bodies, and by the women as a hair wash to strengthen it and keep it from falling.

Who of you has ever walked in our woods without getting on his clothing the common beggar's lice (*Desmodium*)? How tenaciously they stick you all know; so do the Cheroki, and because the burrs stick fast they use a tea made of them to strengthen the memory. The Cheroki at least can dispense with the service of a Loisette.

You whose ambition it is to be good singers have only to drink a tea of crickets, according to the Cheroki, for does not the cricket possess a fine voice and doth he not sing merrily?

The tendency of the human mind to speculate and to draw inferences, a tendency common alike to the savage and the civilized man, cannot be held in check forever, however strong the bonds; and just as knowledge and science escaped from priestly thrall within the history of civilized times, so a certain small amount of knowledge of the therapeutical use of drugs was gaining ground among the common folk of the Indians. It was fairly to be called old woman's practice, as it was largely in their hands. It grew out of observation; infusions of certain herbs produced certain results, acted as emetics or purgatives, and hence these herbs came to be employed with something like an intelligent purpose. Many of the herbs used were absolutely inert, many were harmful, of course, since where there is practically no true diagnosis and no correct knowledge of the effect of drugs there can be no really intelligent selection of remedies; but in the case of certain simple diseases herbs, the actual cautery, and above all the sweating process, were beginning to be recognized by the common folk as serviceable, and to be employed to some extent without recourse to the Shaman.

As the child must creep ere it can walk, in such theories and treatment, childish though they may seem, may be discerned the beginnings of the noble science of medicine which, having largely cast aside the superstitions that hampered its infant steps, now walks erect, and although of late she seems to have revived the beliefs of her childhood, her handmaiden, science, bids her call the demon disease spirits ignorance and vicious habits, the diseases themselves bacilli or germs. The Indian believed that the white man carried the spirit of small-pox in bottles and let it loose among them. Modern science actually does bottle the small-pox germs and germinate them at will. So the Indian theory of disease reappears in a new form.

Such in briefest outline are some of the achievements of the Indian as he was found by civilized man. Whatever value may be placed upon them, whatever rank may be assigned them in the scale of human efforts, they were at least his own, and some of them compare favorably with the record of our Aryan ancestors before they split up into the numerous nations which have done so much to civilize the world. Many, I am aware, hold that the Indian had progressed as far towards civilization as his capacities admitted; others have held, and possibly some now hold, that he was already on the decline; they see in his crude ideas and rude inventions only the degradation of a higher estate; in other words, instead of a savage preparing to enter civilization through the necessary half-way state of barbarism, he is held a half-civilized man lapsing into savagery. Such views, it is needless to say, find no favor in the mind of the evolutionist. To him, the achievements of the Indian are only the milestones which have marked the progress of every civilized nation in its march from what it was to what it is; to him the chief value and significance of his studies of the mental state of the Indian, as expressed in his mythology, his medicine, his social and political organization, or in his more concrete arts, is the fact that in them he reads the records of his own past. If there be any truth whatever in the theory of evolution as applied to human progress, only one inference can be drawn from the history of the Indian race as it appears in historical pages and in the no less eloquent records interpreted by archæologists. This inference is that, starting in its career later than some other races, or being less favored by circumstances or conditions of environment, or possibly being less endowed, the Indian, despite all, had progressed an immense distance

towards civilization; that the race contained all the capabilities for a further advance and for achieving a civilization of its own, differing, it may be, markedly from our own, as other civilizations differ, but still containing within itself all the essentials of that wonderfully complex thing called civilization. Such at least is the lesson evolution teaches.

Hardly had the new land been discovered when the question arose, who are the Indians and where did they come from? Naturally enough the Indian had his own answers to these questions. As to who they are all tribes agree. "We are men," said the Illinois to the French, and the name of every tribe in America—the name by which they know themselves—signifies "true men," "men of men," "the only men," as evincing their superiority to all others. As to their origin, their ideas are as confused and perplexing as they are multifarious and conflicting. It may almost be said, as many tribes so many origins. A large number of tribes claim to have originated in the localities where they were first found by Europeans, where they emerged from the ground or came from the recesses of some neighboring mountain. The Chocta, for instance, claim to have come from an artificial mound in Mississippi. The mound has a depression at its center which is accounted for by the Creator stamping upon it to close the aperture when he saw that a sufficient number had emerged to form the Chocta tribe. One of the Shawni tribes was created from the ashes of the fire. The Yuchi, of Georgia, claim to be children of the sun, who is their mother, and the earth, their father, an exact reversal of the usual parentage. The Pomo, of California, claim that their ancestors, the Coyote men, were created directly from a knoll of red earth. The Klamath, of Oregon, were made from the service berry. The Yokut, of California, emerged from badger holes, as their name implies. Somewhat more poetical is the idea of the Aht, of Vancouver Island, who allege that animals were first created at Cape Flattery, and from the union of these with a star that fell from the skies resulted the first men, their ancestors.

The above are fair examples of the ideas entertained by the Indians respecting their own origin. Puerile they certainly are, yet who will maintain that they are more so than the theories of origin held by the Greeks and other classical peoples?

Who, then, are the American aborigines? For Columbus and his followers there was but one answer to the question. As he had

reached the eastern shores of India the people must be Indians, and his error is perpetuated to-day in the name. Later, when the newly discovered country was found to be not an old, but a new continent, the question of the origin and consanguinity of the Indians was renewed. So strongly tinged with religious thought was the philosophy of the day that biblical sources were naturally first appealed to to solve the knotty problem. As mankind was supposed to have originated in Asia and as all but the ten lost tribes were accounted for they were rationally appealed to for the origin of the Indian. Perhaps the best exponent of the belief in the Jewish origin of the Indians was Adair, who published his celebrated essay in 1775. Thoroughly familiar with Indian beliefs and customs, he succeeded in bringing together a mass of evidence, derived from a comparison of religious rites, civil and martial customs, marriages, funeral ceremonies, languages, and traditions, as curious and contradictory as it is inconclusive.

The Jewish origin of the Indians secured a very strong hold on the minds of the writers and thinkers of the eighteenth century, and so firmly did the theory take root that it has never been wholly given up, but is held to-day by a greater or less number as the only rational belief.

Though the favorite, the Jewish hypothesis is by no means the only one. Scientists and laymen count their theories by the scores. The Bible and ancient philosophy alike have been appealed to in support of pet hypotheses.

One believes America to have been colonized by Phœnician merchants; another, by Carthagenians. America was peopled by Carthagenians, says Venegas, and Anahuac is but another name for Anak. Besides, both nations practiced picture-writing; both venerated fire and water, wore skins of animals, pierced the ears, ate dogs, drank to excess, telegraphed by means of fires on hills, wore all their finery on going to war, poisoned their arrows, beat drums and shouted in battle. Not an unfair example this of the scientific deductions of the day. Surely he must be unreasonable who refuses to be convinced by such testimony!

Says the pious Cotton Mather, the natives of the country now possessed by the New Englanders had been forlorn and wretched eathen ever since they first herded here, and though we know not when or how these Indians first became inhabitants of this mighty continent, yet we may guess that probably the devil decoyed those

miserable savages hither, in hopes that the gospel would never come here to disturb his absolute empire over them.

The evidence that the Indians came from Scandinavia are as convincingly put as those proving that they came from Ireland, or Iceland, or Greenland. Equally conclusive are the arguments for a passage by the Indian across Bering Strait from Asia, across the Northern Pacific from Japan or China in junks, or across the Southern Pacific in canoes from the Polynesian Islands, or Australia. Even Africa is not too far distant to send its contingent to the new land, and when the ocean has been deemed to be too broad to permit a passage from foreign shores the willing imagination of the writer has dropped an island into mid-ocean, and called it Atlantis, to facilitate alike the crossing of the Indian and the reception of a fanciful theory. Thus there is a theory of origin to suit the tastes of all. If you have a special bias or predilection, you have only to choose for yourself. If there be any among you who decline to find the ancestors of our Indians among the Jews, Phœnicians, Scandinavians, Irish, Welsh, Carthagenians, Egyptians, or Tartars, then you still have a choice among the Hindu, Malay, Polynesians, Chinese, or Japanese, or, indeed, amongst almost any other of the children of men.

Preposterous as may seem many of the theories above alluded to, nearly all of them rest upon a certain basis of fact and comparison. Many, at least, of the similarities of thought, custom, methods, arts, religions, and myths from which the theories are deduced indeed exist, though false analogies permeate them all. The thread of fact which sustains the theories is, moreover, far too slender to bear the weight put upon it. It is not that the theories contain so much that is erroneous but the proof offered is entirely insufficient. The science of yesterday reared its edifices upon foundations of fact the very slightest. The science of to-day demands broader foundations and more deeply laid upon which to base its conclusions. Erroneous hypotheses like the above have, however, been productive of great good in pointing out and emphasizing some of the most useful lessons which the student of anthropology of the present day must learn and ever keep in mind. Of these perhaps the most important is that the human mind is everywhere practically the same; that in a similar state of culture man in groping his way along will ever seek the same or similar means to a desired end. That, granting the same conditions of environment, man acts upon them and is

acted upon by them in the same way the world over. Hence, in large part, arise those similarities of customs, beliefs, religions, and arts which have been appealed to as evidences of genetic connection or of common origin, when, in fact, they are evidences of nothing but of a common humanity.

This leads us to speak briefly of some of the leading methods of classification by which scientists have sought to solve the problem of the origin and relation of races and among other peoples of our own Indians.

The physical tests of race most approved by ethnologists are color, viz., the color of the skin, hair, and eyes; the structural differences of the hair; the size and shape of the skull as determined by capacity and measurements, and the test of language. Reserving the latter for more extended notice later, a few words may be devoted to the first named.

Few of the tests formerly relied upon in classifying mankind have proved less satisfactory to modern investigators than that of color. The microscope appears to show that color is not due to organic differences of race; not only are there great differences in the color of individuals of the same tribe, but of the same family, and even in the same individual at different periods of life. Thus, in the case of our Indians, it is well known that the skin of the infant at an early age is very light colored, scarcely distinguishable, in fact, from a Caucasian child, and that it assumes a deeper shade only with advancing years. This, I believe, is true irrespective of tribe or habitat. The hair of the Indian child is brown instead of black. The color of the adult Indian varies within very wide limits, but singularly enough he is never copper colored or red, as he has been called from the time of the discovery. All our Indians are brown, and while certain tribes, as the Tuscaroras and Mandans, are so light as to give rise to the theory that they are descendants of the Welsh, other tribes, as some of the Californians, are so dark as to closely approach the black Africans. I say black Africans, for it is to be remarked, in passing, that some African tribes are very light colored.

The division of mankind into four groups—white, black, copper, and olive—is, in a general way, consistent with facts. Moreover, these divisions are, to a certain extent, correlated with geographical range and climate, and thus correspond to the color differences of birds and animals. That they are also and perhaps more strictly

correlated with culture status is not to be doubted; for it may be said, in a general way, that all civilized peoples are light colored and nearly all barbaric and savage peoples are dark colored. So complete, however, is the intergradation of color when all varieties of mankind are considered, and so intangible are the distinctions which must be relied upon to distinguish them in the case of individuals and even of tribes that it appears that while color affords a convenient off-hand means of classification, and while it may be made useful in connection with other criteria, it is quite insufficient in itself as a test of race.

The more obvious peculiarities of the hair, according as it is straight, crisped, or curly, early attracted the attention of ethnologists. The modern microscope has shown that these peculiarities are more or less intimately correlated with structural differences, and that the straight hair of the American Indian and the Mongolian is nearly cylindrical in section, while the frizzled hair of the Negro and Papuan shows an oval or flattened section. Between the two extremes, however, are too many shades of difference to permit the extensive use of this criterion as a race classifier, except in a subordinate way.

Much time and thought has been expended by craniologists in the effort to classify races by means of the skull. Notwithstanding the great ingenuity exercised in devising methods and instruments to secure constant results and reliable figures as a basis for comparison, the results thus far obtained have been disappointing. So faulty were the mechanical means adopted by the earlier craniologists that students of to-day are compelled to discard their data and resulting conclusions and begin almost *de novo*. There are many able men who are sanguine not only that the physical structure of man may yet be made to reveal secrets bearing upon the origin of races, if there be more than one, but that the science of craniology in particular is destined to have an important bearing upon these racial problems. Whatever the future of craniology or the other methods of classification by physical characteristics may have in store, the contradictory results thus far obtained offer little to satisfy us. Not only do the naturalists and ethnologists who have studied man's physical characteristics differ as to the number of races of mankind and as to what constitutes a proper basis for classifying them, but thus far there has been little agreement as to the assignment of particular tribes or peoples. Perhaps more authorities are agreed that there is

but one race and one origin of mankind than agree upon any greater specific number; but when it is remembered that there are authorities who place the number of distinct races at two, three, four, five, six, seven, eight, eleven, sixteen, and that one places the total as high as sixty-three, it will be agreed, I think, that it is better to suspend judgment and not to accept any present result as final.

We have already noted that the earlier theories of origin for the Indian, based as they largely were upon certain assumed analogies of customs, laws, religious observances, myths, etc., rested upon such slight foundations as to hardly entitle them to be classed as scientific hypotheses. We have also seen that up to the present time the attempts to classify mankind by his physical characters have produced discordant results, and that little dependence is to be placed upon the results themselves or upon the theories arising therefrom which relate to the more profound question of the origin of races. In turning to the test of language, if doubt and uncertainty were left behind and harmony and agreement took the place of discordant views we might count ourselves fortunate indeed. But such is not the case. We have indeed only to go back a short time to find that the generalizations drawn from the study of language are as crude, the hypotheses as baseless, the theories as wild as are those we have just glanced at. Nor is this strange. Like its sister sciences, linguistics had to pass through a period in which speculation and hypothesis, instead of going hand-in-hand with facts and induction, usurped their place. Until the inductive method was born no science of philology was possible. The science of comparative philology is indeed of recent origin, nothing worthy of the name existing before the present century. Within the last fifty years it has made a wonderful growth and achieved results little short of marvelous. Though still in its infancy as regards future possibilities, and while it needs and welcomes the aid of all the other sciences to solve the complex questions which come properly within its domain, it is unquestion ably our best guide in problems relating to the origin and relationship of the races of mankind.

There are two broad and contradictory theories of the nature and origin of language. The first, which may be called the divine theory, is based upon biblical authority, and sees in language a divine gift from the Creator to the first pair. From the language thus miraculously created and put into the mouth of man have sprung all the varieties of speech with which men have clothed their thoughts from

the creation until now. The second or evolution theory sees evidences of growth and development in every language spoken by man. Comparing the languages of highly civilized peoples with those of lower culture, it finds in the latter evidences of the successive stages through which all languages have necessarily passed in their upward growth.

It maintains that language is an acquired possession; that it has originated through powers inherent in man himself; that by means of it he measures the distance between himself and the brutes; in short, by it more than by the possession of any other one thing he is man.

It notes the fact that among lower peoples languages are less and less highly organized; and that among them signs are much more freely used than among the higher; that the sign language is capable of a development among savage peoples and mutes so wonderful as to be the medium of all classes of ideas; and noting these it is prepared to believe, though it has not yet proved, that there was a time in the dawn of the human race when organized vocal speech was unknown, and when the fingers, the facial expression and the postures of the body, were the chief if not the sole means possessed by man to communicate to his fellows his simple wants and ideas. At first it may seem a startling, nay an almost incredible, idea that the time was when men could not talk, I do not say communicate, for it is hardly necessary to remind you that even the lower animals have means of communication. So much is spoken language a part of ourselves, so dependent are we on it, that it appears to be as much a natural possession as eyesight or the power to breathe. It is difficult indeed to conceive of ourselves as human beings without it. Yet each one of us came into the world without the ability to talk, though doubtless we soon made it known to others that we possessed voices, and some of us expended much time and effort ere we acquired the rudiments of speech, to say nothing of the years spent in acquiring facility in its use. The history of the child in this respect is but an epitome of the history of the human race. Ages of the child-life of the race were consumed when the organs of speech existed in a rudimentary condition; ages more passed ere it learned to train the slowly developing and stubborn vocal organs to do its bidding and to utter articulate sounds; and ages more were required ere it had organized the first harsh and uncouth vocables into the harmonious and expressive thing we call language.

Before proceeding further let us glance briefly at some of the methods employed by linguistic students in their efforts to unlock the mysteries of linguistic relationship. It has been well said that he who knows but one language knows no language. The truth of this paradox is chiefly rooted in the fact that every existing language has varied and developed from earlier and ruder forms; that furthermore no language has had an independent existence, but each one is connected in its origin and by affiliation with sister tongues that earlier or later in the history of the races speaking them have separated from the mother language and thenceforth have pursued each its own career; he then who would be master of his own tongue must study not only its vocabulary and grammar, but for enlightenment on many obscure points must study its related dialects. How the comparative study of language is to be carried on linguistic students are well agreed. Since language is made up of words, each word being the sign of a thought, the science of linguistics is largely the study of words—in other words, it is the tracing word genealogies by means of their etymology. By stripping words of the accretions they have received in the process of time they may be resolved into roots, and by the comparison of these roots the philologist obtains proof of relationship and classifies languages into linguistic families.

It may be well at this point to define clearly what linguists mean by a linguistic family. A linguistic family is a group of languages which have sprung from a common parent language. The first requisite of a linguistic family, therefore, is that the languages composing it shall be related genetically; the second, that they shall not be related to the languages of any other family. Each family thus consists of a group of languages wholly disconnected from all other families.

Voltaire said that to the etymologist vowels are of little consequence and the consonants of none at all, and for much that passes for etymologizing there is as much truth as wit in the saying. But there are etymologists and etymologists; moreover, in most related languages there is a large body of words, whose resemblances are so obvious and the manner and extent of the changes they have undergone so clear that he who runs may read. The chief danger to the student in dealing with such material is to mistake apparent for real resemblances, and to be led to present false word analogies as evidences of true genetic relationship. Much, then, of the work of the student is easy; but as his labors deal with linguistic changes more

and more remote in point of time the greater is the difficulty, and he who undertakes the task of comparing with each other all of the languages into which the larger linguistic families are split and to trace back the origin of their vocabularies to a common parent must indeed arm himself with all the resources of ripe scholarship, critical ability, and caution if he would successfully avoid the pitfalls which beset his steps at every turn.

That linguistic science is competent to deal with problems of great magnitude and intricacy, and that there are students who are capable of applying its varied resources, best appears in the grand achievements which concern the group of languages known as the Aryan or Indo-European family, in which our own English tongue takes a prominent if not the first place. It is almost wholly as the result of linguistic studies that the component members of the large and important Aryan family are now recognized and the history of its earlier members reconstructed to a remarkable degree. The family contains eight groups of distinct languages. Among many others the family includes as offspring from one source Sanskrit, Hindu, Romany or Gipsy, Persian, Armenian, Welsh, Cornish, Irish, Scotch, Latin, Italian, French, Spanish, Portuguese, Albanian, Greek, Bulgarian, Russian, Servian, Polish, German, English, Dutch, Swedish, Danish, Norwegian, and many others. Though one of the largest and, by reason of its history and the prominent part it has played in the civilization of the world, the most important, the Aryan family is only one of many linguistic families, each one of which is made up in the same way of a greater or less number of related languages. Such are the Bushman and Hottentot, of Africa; the Semitic, of Asia and Africa; the Chinese, Australian, and many others. The related languages which make up linguistic families vary indefinitely in the amount of likeness they bear to each other. They are often so much unlike that those who speak them cannot understand each other, as, for instance, English, German, and French. Though these languages are mutually unintelligible, yet they contain many words of nearly identical form, while other members of the Aryan family have in process of time become so unlike affiliated tongues that it requires the most critical study to detect their relationship. As languages are the principal divisions of a linguistic family, so dialects are the subordinate divisions of a language. Family, languages, and dialects are to linguistic science what family, genera, and species are to biology.

There is an important question which may be considered at this point. To what extent is linguistic relationship to be interpreted as blood relationship; in other words, how far does linguistic classification answer for race classification. In cosmopolitan America, where nearly all speak English and yet a very large proportion are of foreign parentage, it is obvious that a pure linguistic classification of individuals would largely misinterpret the facts of parentage and race. Nevertheless, taken in connection with readily ascertained facts, it will not mislead even in such an extreme case, and usually a language classification of a tribe or people actually does express race relationship.

To return to the Aryan family: Not only are we able by means of language to class together as related members of one great family the above-mentioned languages, which apparently are so diverse in the sound and form of their words, but by means of word analysis we can reconstruct the past history of the peoples who spoke them and can get a glimpse even of the mode of life, customs, arts, and religious beliefs of our remote Aryan ancestry. The process by which this is done is sufficiently simple, although, like many other simple processes, its application is not so easy. When we find in the greater number of the languages of a linguistic family the same fully formed word with the same meaning we are justified in believing that it existed before the separation of the family, and that the thing it signifies was already known to the parent body. Applying the rule to the case of the Aryan family we learn that contrary to earlier theories our forefathers came from a cold region, since eastern and western Aryan tongues contain names for the birch and pine, and these are the only two tree names common to both branches. The same process continued shows us that the family relations were defined much as they are with us to-day and that marriages were monogamous. The old Aryans held the land in common and redistributed it from time to time among the members of the clan. The houses were built of wood and were entered by means of a door. The communities were settled in villages with a recognized chief or head, and the villages were connected by roads over which traveled peddlers carrying their wares for sale. All were free men. They worshiped natural objects and natural phenomena, more particularly the sun. They believed in the evil spirits of night and darkness. They were a pastoral people, and cattle and sheep formed their chief wealth. They also had goats, pigs, dogs, geese, and bees. They had domesticated the

horse though they did not ride, but employed him like the ox for drawing carts. They still used stone implements, though gold and silver and bronze were known. Charms were chiefly relied upon to cure disease. Future events were divined from the flight of birds. These are a few of the facts among many which linguistic science has revealed to us pertaining to the life and achievements of our Aryan ancestry before the historic period. Surely no contemptible record this for a new science.

You will not fail to notice that there are a number of points in common between the condition of our Aryan ancestors and the Indian, though the former as a whole were much further advanced.

We have glanced in the briefest possible manner at the methods pursued by linguistic students and have noted a few of the results achieved by them in th study and classification of the highest developed languages. The study of such languages affords criteria of great value, but, were the linguistic student to confine his attention to these alone, his view of the nature and processes of linguistic development would necessarily be imperfect and one-sided. Just as in biology the study of the lower organisms throws a flood of light upon the structure of higher forms, so in linguistics must the lesser developed languages be appealed to for the settlement of many linguistic problems displayed in highly developed ones. Let us now turn our attention to the Indian languages of this country and see what progress has been made in the attempt to classify them.

It may be premised that no part of the known world affords a better opportunity for the study of the nature of language and its processes of growth than America. The Indian languages are by no means the most primitive at present spoken by man, and it may surprise some of my hearers to be told that in respect of some of their characteristics they compare favorably with Greek and other classic tongues, though the classic languages as a whole belong to a much higher stage of development. Instead of being mere jargons of words, disconnected with each other and capable of expressing only the simplest ideas, as I find many intelligent people believe, they are in some directions singularly highly developed, and not only are they capable of serving as the vehicle of every thought possible to their possessors, but their vocabularies are extensive, possess many synonyms, and furnish the means of discriminating the nicest shades of meaning.

There is not a principle or process in the most highly developed languages of which the germs at least are not discernible in Indian languages. The differences are not those of kind but of degree of culture.

Moreover inherent in them is the power of unlimited growth and expansion, and just as our own language grows, keeping step with advances in science and art, so Indian languages are capable of a development equal to the most exacting demands of civilization.

While thus in many respects highly developed, Indian languages are not to be compared as vehicles of thought with such languages as our own English, for instance. As a body they are still in that stage of development in which the various processes of language-making may be studied with comparative ease. Just as the various natural processes by which mountains are leveled and the earth's surface carved out and remodelled are more apparent and more readily studied by the geologist in the still primitive West, so Indian languages offer to the scrutiny of the linguistic student a similar unfinished condition highly favorable for analysis and study.

For the past fifteen years Major Powell and his assistants of the Bureau of Ethnology, with the aid of many collaborators in various parts of the country, have been accumulating vocabularies by means of which to classify Indian languages. The present provisional results of the study of the large amount of material accumulated appear before you on the Linguistic Map, which is colored to show the areas occupied by the several linguistic families. Of these there appear no fewer than 58.

What interpretation are we to place upon the astonishing fact that in the territory north of Mexico there were at the time of the discovery 58 distinct Indian linguistic families, containing some 300 or more languages and dialects?

So far as language is a competent witness she has exhausted all the evidence thus far accumulated when she has grouped the Indians in 58 families. Back of this point she may not now go except as a theorist and in pure speculation. So far as she is entitled to speak authoritatively, these 58 families are separate entities, which never had any connection with each other. But she recognizes her own limitations too well to dare to state positively that this is the interpretation that must be placed upon the results she has attained. When facts from which to draw deductions fail, men may and do resort to theories. Let us glance at the two broad hypotheses which

have been based upon the development theory of language. The first is in effect that all the present languages of the earth are not so unlike that they may not have been developed from a single original parent language. By this view the original language is supposed to have changed and developed into all the various forms of speech that are now spoken or that have ever been spoken. According to this view the families of languages as at present classified have no other significance than as groups of related tongues, the once existing connection of which with other tongues cannot now be proved, because through the process of change the connecting links have been lost.

The second hypothesis assumes that there must have been at least as many original languages as there are now existing families; it assumes, in other words, that the families of speech are fundamentally distinct and therefore cannot have had a common origin. The first theory postulates that from original unity of language has come infinite diversity; the second that the tendency has ever been from original diversity towards unity.

Widely different as are these two theories of the origin of linguistic families, they agree in one essential particular. They both remove the origin so far back in time as to make it practically impossible to *prove* the truth or falsity of either theory.

Both of these hypotheses have able advocates; but for a variety of reasons, which time will not permit me to give, the second is deemed the more plausible. At all events, it best explains many difficulties.

There is abundance of archæologic evidence showing that man has resided on this continent for a very long period, and the character of the remains prove that the farther back in time we go the ruder being he was. Linguistic testimony is to the same effect, and there is no *a priori* reason why man may not have lived upon this continent ages before he learned to talk, no reason for that matter, why America may not have peopled the earth, if the earth was peopled from a single center, or why, if there have been several centers of origin for mankind, the Indians, as they themselves believe, may not have originated here where they were found.

It is the fashion, I hardly know why, unless it be the religious bias, for those who hold that language has had but one origin to assume that America is the younger continent, so far as her people are concerned, and to infer that it was peopled from Asia. If

America was peopled from Asia in modern times there should be some evidence of the fact in American languages. But there is no evidence of the sort. None of the American families of language are in any way related to the Asiatic tongues. Bering Strait furnishes indeed a perfectly practicable canoe route from Asia to America, but it appears to have been generally overlooked that the Strait furnishes an equally accessible route from America to Asia. The latter is demonstrated by the fact that the Eskimo of Alaska have in recent times sent an Eskimo-speaking colony across Bering Strait to Siberia. In other words, so far as direct testimony goes, Asia is indebted to America for a small segment of its people, but America owes no similar debt to Asia. With reference to the origin of our Indian tribes, then, linguistic science is in position to state this much, that if our Indians came to America, either from Asia or from any other foreign shore, it was at a period so remote as to permit such profound changes in the structure of the language brought here by the immigrants that no traces of genetic connection are now discernible.

If we reject the one origin theory of language and assume that each linguistic family originated independently, there is obviously not the slightest use of turning to Asia or Europe for anything like a recent importation of the Indian; for have we not fifty-eight distinct origins to account for? Obviously the fifty-eight families are as likely to have originated here as anywhere else; for remember that every country has linguistic families of its own to account for. Is there, then, any possible theory which will meet the case? There is certainly one that is possible, if not probable. It is the theory that, whether born from the soil or an immigrant from other lands, our Indians spread over the entire continent before they acquired organized language, and that from not one but from fifty-eight centers sprung up the germs of speech which have resulted in the different families of language. This theory accords with the idea that there may have been but one origin of man, and that in any event all the Indians from the Arctic to Patagonia are of one race. It does not forbid the supposition that the Indian was an immigrant from other shores, though it permits the thought that the American Indian may have originated on American soil.

Though this theory seems more probable than the other, which assumes that the languages of our Indians were brought here from foreign shores, it must be frankly admitted that linguistic science is

not now and possibly never will be competent to decide between them. If she is unable to decide fully as to the origin of the Indian's language, how can she be expected to solve the infinitely more complex problem which concerns the ultimate origin of the peoples who spoke them? She certainly has no solution for this problem now. When she considers the number of linguistic families and the vast length of time it must have taken to develop their languages and dialects she finds herself confronted by a problem beyond her present powers. And yet the case is not hopeless. Linguistic science is still in its infancy, and its future may contain possibilities far exceeding the dream of the most sanguine. As science has revolutionized the world's processes and has made the impossibilities of a hundred years ago the common-places of to-day, so like wonders may be achieved in the domain of thought, and the science of language, with the assistance of her sister sciences, may yet answer the unanswerable questions of the present.

When interrogated as to the origin of the Indian, all that she can now say is that whether the Indian originated on this continent, where he was found, or elsewhere, it was in bygone ages—ages so far removed from our own time that the interval is to be reckoned, not by the years of chronology, but by the epochs of geologic time; with such problems she affirms that at present she cannot deal.

I have presented the subject to you to-day, not to answer it, but to aid you in comprehending the tremendous difficulties that enshroud the problem. Much time and ingenuity has been expended in the past in attempting to force an answer to a question which cannot even yet be answered. The question, however, that really concerns the ethnologist of to-day is not *who* are the American Indians, but *what* are they and what have they accomplished in working out the problems of life, which, ever since his birth, man has grappled with.

In reading the history of mankind we are too apt to be blinded by the achievements of our own Aryan race. As the old Greeks classed as barbarians all who did not speak their own tongue, so we are prone to think that most of the good that has come to humanity has come through and by means of our race. In truth, there are valuable lessons to be learned from races less high in civilization than our own. Though many and diverse are the roads that lead man to the higher life, they all pursue about the same

course, and time only is required to unite them into one broad stream of progress.

Many are the lessons taught by anthropology, but the grandest of them all is the lesson of the unity of mankind, the unity of a common nature and a common destiny, if not of a common origin.

TRIBAL BOUNDARY MARKS.—Among the North American Indians tribal land boundaries are usually natural features—a mountain chain, a stream, etc. An interesting example of the artificial boundary mark occurs in the ancient province of Tusayan, in Arizona, within which are the seven villages of the Tusayan (Moki) Indians. According to tradition, Oraibi was originally settled by the Bear people from the village of Cûñopovi. The Bear people had two chiefs who were brothers, the elder was called Vwen-ti-s'o-mo and the younger Ma-t'ci-to. They quarelled and their peopled divided into two factions. After an indefinite period of contention, Ma-t'ci-to and his followers withdrew to the mesa where Oraibi now stands, and whenever any of the Cûñopovi became dissatisfied with that place they built at Oraibi. Ma-t'ci-to placed a little stone monument about half way between the two villages to mark the boundary of the land. Vwen-ti-s'o-mo objected to this, but it was ultimately accepted with the proviso that the village growing the fastest should be privileged to move the stone toward the other village. The monument still stands and is on the direct Oraibi trail from Cûñopovi, three miles from the latter. It is a well-dressed rectangular block of sandstone, projecting two feet above the ground, and measures 8½ by 7 inches. On the end is carved a rude human head or mask, the eyes and mouth being round shallow holes with black lines painted around them. The stone is pecked on the side, but the head and front are rubbed quite smooth, and the block, tapering slightly to the base, suggests the ancient Roman termini.

A. M. STEPHEN.

NOTES ON OJIBWA FOLK-LORE.

BY W. J. HOFFMAN, M. D.

In a paper read before the Anthropological Society at its 138th regular meeting I presented the results of investigations among the Ojibwa of Northern Minnesota during the summer of 1887. Those investigations were in the line of the study and interpretation of pictographs and mnemonic records which relate directly or indirectly to the practices and ceremonials of the Mide' or Shaman, a personage usually, though erroneously, designated "Medicine Man."

At Red Lake I discovered the existence of an ancient chart which, according to the assurances of the chief and the Mide' priests, had never before been exhibited to a white man, nor even to an Indian until he had paid the required fees; and then only after necessary preparation by preliminary fasting and visions preceding instruction for his ultimate reception into the Mide'wiwin, or Grand Medicine Society.

This chart measures seven feet one and one-half inches in length, eighteen inches in width, and is made of five pieces of birch-bark neatly and securely stitched together by means of thin, flat strands of bass wood. At either end are two thin strips of wood, secured transversely by wrapping and stitching with thin strands of bark, so as to prevent splitting and fraying of the ends of the record.

It had been in the keeping of Skwekom'-ik, to whom it was intrusted at the death of his father-in-law, the latter, in turn, having received it in 1825 from Ba-da'-sân, the Grand Shaman and chief of the Winnibigo'shish Ojibwa.

It is affirmed that Bada'sân had received the original—of which the above is a copy—from the Grand Mide' at La Pointe, where, it is said, the Mide'-wiwin was held annually and the ceremonies conducted in strict accordance with ancient and traditional usage.

La Pointe was the final traditional resting place of the Ojibwa as a nation in their protracted migration from the Great Salt Sea in the east. Soon, however, circumstances—to which it is impracticable to refer—compelled some of the bands to penetrate the

country to the west and southwest of Lake Superior, which caused a general dismemberment of the Grand Medicine Society, so that for many years thereafter new and independent medicine lodges were built and the annual initiations continued. In time these were interfered with by the missionaries, and later by the United States Indian agents, so that at the present time the ceremonies are conducted only at irregular intervals and in secret places. Under the direction of the Bureau of Ethnology, a second visit was made to Red Lake during the summer of 1888, when a complete description of the above record was obtained; and upon returning to White Earth two additional records, interesting variants of the first, were also secured, together with much of the ritual. This consists largely of an archaic form of speech—songs with musical notation and many details pertaining to sacred objects, myths, facial decoration, and personal adornment, all which relate to the rites of initiation and advancement in the several degrees.

In the following brief *résumé* of the tradition relating to the intercession of Mi'nabo'zho,* with Dje Manedo—the good and benevolent spirit—will be noticed the constant reference to the number four, the mystic or sacred number of the Ojibwa, which survives in most of the myths and folk-tales of more modern origin.

These narrations are translated into English with as close adherence to the spirit of the originals as possible.

When Mi'nabo'zho, the servant of Dje Manedo, looked down upon the earth he beheld human beings, the Unish'inanbaig', the ancestors of the Ojibwa. They occupied the four quarters of the earth—the northeast, the southeast, the southwest, and the northwest.

Desiring to give these people the secret of warding off disease, with which they appeared to be constantly struggling, Mi'nabo'zho remained over the center of the earth in contemplation, endeavoring to devise some means of communicating with them, when he perceived a dark object to appear upon the surface of the water in the west. He could not recognize its form, and while watching it closely it slowly disappeared from view. It next appeared in the north, and after a short lapse of time again disappeared. Mi'nabo'zho hoped it would again show itself upon the surface of the water, which it did in the east. Then Mi'nabo'zho wished that it

* Pronounced also Me'nabo'zho and Wi'nabo'zho.

might approach him so as to permit him to communicate with it. When this object again disappeared from view in the east and made its reappearance in the south, Mi'nabo'zho asked it to come to the center of the earth that he might behold it. Again it disappeared from view, and after reappearing in the west, Mi'nabo'zho observed it slowly approaching the center of the earth, when he descended and saw it was the otter, now one of the sacred animals of the Ojibwa and one of the most powerful spirits.

To be brief, Mi'nabo'zho instructed the otter in the mysteries of the grand medicine, giving him at the same the sacred rattle, to be used at the side of the sick; the sacred drum, to be used during the ceremonial of initiation and at death; and tobacco, to be employed in invocations and in making peace.

The first design upon the Red Lake chart consists of a large circle, representing the earth as observed from a fixed point, small squares being attached at the cardinal points to indicate the four places where the otter appeared, between which are four semicircles or mound-like appendages, denoting the habitations of mankind upon the four quarters of the globe. In the center of this circle is a spot to represent an island where the communication was given to the otter.

The Mide' usually fear one another on account of imaginary superior powers possessed by rivals, but the one who is feared by all is termed *Mi'nisinō'shkwe*, "He who lives on the island."

The above myth is but an example of the numerous tales and traditions which precede the necessary preparations for initiation. Many of these are in mnemonic form, drawn upon birch bark, and are chanted.

In connection with the tradition of Mi'nabo'zho, allusion is also made in the ritual to the colors of the cardinal points. According to Sicos'ige, a second degree Mide' of White Earth, *white* represents the east; *green*, the south; *red*, the west, and *black*, the north. Sicos'ige's wife was a Mide' priestess of the fourth degree, and although he had received but two degrees in the regular order of initiation, he had been permitted to be present at her reception, at which time he became acquainted with the entire ritual, although in assisting at ceremonies he was not permitted to actively participate beyond the second degree.

Ojibwa, the only fourth degree Mide' priest among all the Indians of the Red Lake and White Earth reservations who number over

4,200 souls, does not belong to the same band of Indians as Sicos'-ige and received his degrees in a different locality. The rituals differ somewhat, and the colors of the sacred posts planted in the several degree lodges, as well as those pertaining to the cardinal points, are different, viz., Ojibwa states that *red* represents the east; *green*, the south; *white*, the west, and *black*, the north.

As just stated, sacred posts are planted in the Mide'wigan. At the base of these are deposited sacred objects, and they also serve for other mysterious purposes, an account of which would consume too much space for the present paper as a complete history of this subject is in contemplation.

According to Sicos'ige, the pole for the first degree is painted red, with a green band around the top. That for the second is red, with two green bands, one at the top and one at the middle. The third degree is designated by a cedar sapling having the bark upon it, and near the top a cross-piece, the whole in the form of a cross; this is painted red, the top of the pole and the ends of the cross-piece each having a band of green. The fourth degree pole is squared, bearing the colors of the cardinal points upon the respective sides, viz., east, *white;* south, *green;* west, *red*, and north, *black*. Upon this pole is placed the stuffed body of the white owl (*Nyctea nivea*), within which the owl spirit resides during the ceremonies.

According to Ojibwa, the arrangement of poles is rather complicated, there being a total of ten poles for the four degrees, distributed as follows:

First degree. One pole painted red, having white spots scattered irregularly over it, upon which is placed the owl—*ko-ko'-ko-ū'*.

Second degree. Two poles, the first being that of the first degree, bearing the owl, and the second painted white with two red bands, each four inches broad, one at the top and one about the middle.

Third degree. Three poles, the first of which is painted red, the second is covered with white clay, and the third black. Upon the last is placed the owl.

Fourth degree. Four poles, of which the first is painted white upon the upper half and green upon the lower; the second is similar to the first; the third is red, with a black spiral band running round it from top to bottom, upon which is placed the owl; the fourth is in the shape of a cross, painted white, with red spots, excepting the lower half of the trunk which is squared, the colors upon the four sides being *red* on the east, *green* on the south, *white* on the west, and *black* on the north.

Although the skin of any animal or bird, to serve as a medicine sack, may be given to a candidate upon the completion of his initiation, the four Mide', who are the chief actors in the ceremony, use the following and may be identified by these insignia: The first, or highest, has a sack made of gray squirrel skin; the second, of weasel; the third of mink; and the fourth, of an owl.

When an Indian desires to become a Mide', and so informs the chief priests of the society, he states that "he wishes to buy a megis." The megis is the sacred emblem of the society, and consists of a small white shell greatly resembling a cowrie. At the present time the four degrees are respectively identified by a specific kind of shell or similar object, no one being permitted to wear the megis of a higher degree than that of which he is a member.

The several specific methods of facial decoration employed by the candidate for initiation are, according to Ojibwa the chief Mide' at White Earth, as follows:

First degree. One red stripe across the face from near the ears across the tip of the nose.

Second degree. One stripe as above and another across the eyes, temples, and root of the nose.

Third degree. The upper half of the face is painted green and the lower half red.

Fourth degree. The forehead and left side of the face, from the outer canthus of the eye downward, is painted green; four spots of vermillion are made with the tip of the finger upon the forehead and four upon the green surface of the left cheek. In addition to this, golden eagle feathers stained red are also worn upon the head and down the back.

The ornamentation adopted, according to Sicos'ige, is as follows:

First degree. A broad band of green across the forehead and a narrow stripe of vermillion across the face just below the eyes.

Second degree. A narrow stripe of vermillion across the temples, eyelids, and the root of the nose, a short distance above which is a similar stripe of green, then another of vermillion, and above this again one of green.

Third degree. Red and white spots are daubed all over the face, the spots averaging three-fourths of an inch each in diameter.

Fourth degree. Two forms are admissible; in the first the face is painted red, with a stripe of green extending diagonally across it from the upper part of the left temporal region to the lower part of

the right cheek. In the second the face is painted red with two short, horizontal, parallel green bars across the forehead.

Either of these may be adopted as a sign of mourning by a man whose deceased son had been intended for the priesthood of the Grand Medicine Society, More of this will be mentioned in connection with the ceremony of the Ghost Society.

When painted for dances or other ceremonies, a Mide' may always be recognized, as also his status in the Mide'wiwin. Each degree has its chief and three principal assistants, each of whom may be known by the kind of skin used for a medicine bag.

Years are spent in preparation for the first degree of the Grand Medicine, and there are many who have impoverished themselves by the payment of fees—consisting of horses, robes, arms, utensils, and money—and in the preparation for the feast, to which all are invited.

One degree only is conferred at any one meeting of the Mide'wiwin, and it is apparent, therefore, that at least four years are consumed in completing the education of a Kit'shi Mide', or Grand Medicine Man.

There is only one other way to attain the rank of a Mide' of the first degree, though one may secure the remaining degrees in the usual manner by paying therefor. This is through the Dji'-bai Mide'-wi-gân', literally, *Ghost Spirit-Lodge*, or, more commonly, *Ghost Society*.

After the birth of a male child it is customary to invite the friends of the family to a feast, designating at the same time a Mide' to serve as godfather and to dedicate the child to some special pursuit in life.

The Mide' is governed in his decision by visions, and it thus sometimes happens that the child is dedicated to the "Grand Medicine"—*i. e.*, he is to prepare to enter the Society of the Mide'. In such a case the parents prepare him by having the best instructors, and gather together robes, blankets, and other gifts to be presented at the time of initiation.

Should this son die before the age of puberty, before which time he cannot be admitted, the father paints his own face as above described, viz., red, with a green stripe diagonally across the face from left to right; or red, with two short horizontal parallel bars in green upon the forehead. He then announces to the chief Mide' his intention of becoming a member of the Ghost Society and his read-

iness to receive the first degree of the Mide'wiwin, or Grand Medicine Society, thus representing his deceased son.

In due time a council of Mide' is called, who visit the lodge of mourning where they partake of a feast. The Ghost Lodge is erected at some distance from the village, toward the west, where the spirits of deceased Mide' are supposed to meet to receive the spirit of him who died last and for whom mourning is still continued. Dishes are carried from the mourner's lodge to the Ghost Lodge, placed around the interior at positions corresponding to the places as if occupied by human beings. A large dish is also placed in the center of the lodge for the spirit of Dje Manedo, the Good Spirit, who presides. Food is placed upon all the dishes, and while the spirits are enjoying the offering the preparatory instruction is being continued in the council of Mide' at the lodge of mourning.

The father of the lately-deceased boy is then instructed in the manner in which he is to dress and to proceed, symbolizing the course pursued by the spirit of his son on his way to the spirit world. He must take one pair of bear-skin moccasins, one pair made of wolf-skin, and one of pheasant skins. These are to be carried to the Ghost Lodge, walking barefooted, picking a strawberry from a plant on the right of the path and a blueberry from a bush on the left, plucking June cherries from a tree on the right and plums from another on the left. He is then to hasten to the Ghost Lodge, which is covered with megis—sacred white shells, the emblem of the Mide'wiwin—and to deposit the fruit and the moccasins; these will be used by his son's spirit in traveling the road of the dead after the spirits have completed their feast and reception of him.

Suffice it to say that the father—after returning to his own wigwam in which the Mide' priests are awaiting his return—is taken to the Mide'wigân', or Grand Medicine Lodge, and received in due form.

Sometimes the mother of one who had been so dedicated to the Grand Medicine Society is taken into that society, particularly when the father is absent or dead.

The following tradition is an account of a visit of the spirit of a boy to the abode of Dje Manedo, the chief priest of the Ghost Lodge, or, in other words, the "Land of the Sleeping Sun"—Ne'-ba-gi'-zis:

Once an old Shaman, with his wife and son, started out on a hunting trip, and, as the autumn was changing into winter, the three erected a substantial wigwam. The snow began to fall and the cold increased, so they decided to remain and eat of their stores, game having been abundant and a good supply having been procured.

The son died; whereupon his mother immediately set out for the village to secure help for his restoration to life, as she believed her father able to accomplish this, he being chief priest of the Grand Medicine Society.

When the woman informed her father of the death of her son, her brother, who was present, immediately set out in advance to render assistance. The chief priest then summoned three assistant Shamans, and they accompanied his daughter to where the body of his dead grandson lay upon the floor of the wigwam covered with a blanket.

The chief Shaman placed himself at the left shoulder of the dead man, the next in rank at the right, while the two other assistants stationed themselves at the feet. Then the youngest Shaman—he at the right foot of the deceased—began to chant a medicine or sacred song, which he repeated a second, a third, and a fourth time.

When he had finished, the Shaman at the left foot sang a Mide' song four times; then the Shaman at the right shoulder of the body did the same, after which the chief priest sang his song four times; whereupon there was a perceptible movement under the blanket, and as the limbs began to move the blanket was taken off, when the boy sat up, but was unable to speak. He made a sign by thrusting his curved index finger downward before the chin to indicate that he desired water, which was given to him.

The four Shamans then chanted, each preparing charmed remedies, which were to be given to the boy to complete his recovery. The youngest Shaman, standing at the right foot of the patient, gave him four pinches of powder, which he was made to swallow; the Shaman at the left foot did the same, then the Shaman at the right shoulder did likewise, and he was in turn followed by the chief priest standing at the left shoulder of the boy, whereupon the latter immediately recovered his speech and said that during the time that his body had been in a trance his spirit had been in the Spirit Land, and had learned of the Grand Medicine.

The boy then narrated what his spirit had experienced during the trance, as follows:

Gi'gimĭn'ĕgo'min mide'wiwin' mide' man'ĭdo 'ngigĭn'oamâk bandzhige'owe'ân ta'zine'zhowak' nizha'nĕzak', kĭwi'degĕt' mi'opi'ke'nebui'yan, kaki'nĕ kawe'dege' mi'owŏkpi' ikan'oamag'ina mide' man'ĭdo wiwe'nitshĭ mide'wiwĭnk', ki'mĭma'disiwĭn'inân' kimi'nĭgonan' geon'dĕnamonk ki'mima'disi'wiwa'ninan'; ki'kĭno'amag'winan' mâsh'kiki ogi'minig'owan' odzhibig'ân gime'ninagŭk' mosh'kikiwa'bo shtĭkwan'akose'an oma'mâsh'kĭki' ma'giga'to ki'kayatōn'.

The following is a translation:

He, the Medicine Spirit [Dje Manedo], gave us [the Ojibwa] the Grand Medicine, and he has taught us how to use it. I have come back. There will be twelve, all of whom will take wives; when the last of these is no longer without a wife, then will I die. That is the time. The Medicine Spirit taught us to do right. He gave us life, and told us how to prolong it. These things he taught us, and gave us roots for medicine. I give you medicine; if your head is sick, this medicine put on; you will put it on.

This is the Mide' belief respecting the origin of ginseng root.

In the above, the reference to twelve—three times four—signifies that twelve chief priests shall succeed each other before death will come to the narrator. It may be observed, also, that a number of archaic words, or forms of pronunciation, occur in the text, which is also an indication of the antiquity of the narrative as preserved by the Ojibwa.

CHEROKEE PLANT LORE.—Some of the plant myths of the Cherokees are extremely interesting and relate to the days when the earth was full of wonders. Corn, the great food staple of the Indian, sprang from the life blood of an old woman who was killed by her unnatural sons. Before she expired she directed them to cut off her head and drag the lifeless body upon the ground seven times in a circle. Wherever a drop of the mother's blood fell upon the earth a green blade shot up and developed before the next morning into a stalk of ripened corn.

All diseases were invented by the deer, birds, and other animals in order to check the rapid increase of the human race, which threatened to crowd them out of existence. When the plants, who

are friendly to humanity, heard what the animals had done, they held a council and each in turn agreed, when called upon by man in his distress, to furnish a remedy to counteract the evil spells of the animals. Thus originated medicine, and even the most insignificant weed has medicinal virtues even though unknown.

A long time ago the Cherokees went to war against a giant monster. They killed him, brought his head home in triumph, and placed it upon the top of a cedar pole in front of the townhouse. The blood trickling down along the trunk colored the pole red and so the wood of the cedar is red to this day.

When the world was made, Une'lanûhi, the great Apportioner, commanded that all the trees should keep awake for four days and nights. The pine, spruce, and balsam were obedient to his will, but the others proved unable to withstand the temptation to sleep, and the Apportioner in his anger declared that as a punishment they should lose their leafy covering during the winter, while the pine and other trees who had obeyed him should be fresh and green forever.

The poison ivy is called "the climber," and boys, when playing in its vicinity, endeavor to propitiate it by saying to it, in a soothing tone, *igá'nalíĭ*, "you are my friend."

Once the only human beings in the world were a man and his wife, and having quarreled, the woman left her husband and started to return to her home in the Sun Land. In his loneliness the man applied for aid to Une'lanûhi, who caused a patch of ripe huckleberries to spring up in the woman's path, but she merely glanced at them and went her way. A little further on she saw some fine large blackberries; then raspberries and gooseberries, and a clump of service trees loaded down with bunches of bright red fruit; but she heeded none of them and still held her way toward the east. Finally, she saw her pathway covered with strawberry vines loaded with rich, luscious berries. Unable longer to resist temptation, she bent down to gather a handful, and as she did so her heart was drawn irresistibly to her absent husband, so that she was unable to go further. After satisfying her appetite, she returned to her husband, carrying as a peace-offering the first strawberries that ever were known in the world. The man and his wife "lived happily ever after," but thenceforth the woman's will was subordinated in all things to that of her husband.

JAMES MOONEY.

THE ABORIGINES OF THE DISTRICT OF COLUMBIA AND THE LOWER POTOMAC—A SYMPOSIUM, UNDER THE DIRECTION OF THE VICE PRESIDENT OF SECTION D.

INTRODUCTION.

BY OTIS T. MASON.

The proposal has been frequently made to prepare a series of monographs upon the natural history of the District of Columbia. Already have appeared Ward's Flora of the District, Coues and Prentiss' Avifauna of the District, and a small pamphlet by Mr. Kengla on the archæology of the District. About nine years ago I read a paper before the Biological Society upon the human fauna of the District, including the aborigines, the early white settlers, and the present white and black population.

It has been my constant desire since then to enlarge this paper so as to compare the geological structure of this area with that of the Delaware valley, for instance; to note and describe residence sites, workshops, paint and soapstone quarries; to make a study of all the forms of stone implements found in this region and to rehabilitate them—that is, to collate them with their proper functions by means of hundreds of thousands of the implements and weapons of modern savagery which I have handled over and over again in the National Museum.

Finally, the occurrence of Arber's reprint of John Smith's works revived my anxiety to do for him what Colonel Yule has done for Marco Polo, though, I think, with much greater help to a correct conclusion.

Happily, the Anthropological Society of Washington, at its very first meeting, assumed the burden of attending to local history. The four sections of the Society each have a vice-president, who may, when expedient, call together those who are affiliated with him for special investigations.

This evening for the first time your are to enjoy the result of such a sectional meeting. The vice-president of the section of technology,

despairing of accomplishing unaided all that is to be desired with reference to the human fauna of the Potomac and Chesapeake tide-water region, a few months ago devised the plan of inviting the co-operation of members of our Society. The gentlemen responded promptly to the call, and it was decided to prepare first a series of short papers to be read before the society, and afterwards to make them exhaustive, so as to form a monograph, illustrated by appropriate maps and figures. Each gentleman who will read a paper to-night has been selected on account of his eminent fitness for the task.

You will first listen to a geological paper by Mr. W J McGee, who has devoted his studies to superficial geology, who prepared for the Survey its map of the United States, and who is perfectly familiar with the life history of every rock and pebble in the area under consideration. He has been requested to give us an account of the formation of this region, to show us why we are not to look for human remains or the relics of human art deep in the gravels, where the Trenton collectors find them, and to clear away any obscurities about the problem dependent upon our ignorance of the geological situation.

The second paper will be read by Mr. Thomas Wilson. A residence of five years in France, where he studied assiduously the archæology of Abbeville, of the Dordogne valley, the megalithic monuments, and the lake-dwellings of Switzerland, has quickened Mr. Wilson's apprehension of the importance of searching for evidences of palæolithic man all over our country. The speaker will endeavor to show you that palæolithic implements, of the same form as those of Europe, are found in our tide-water region, and under circumstances that leave no doubt in his mind of the occurrence here of a rude stone age long prior to the neolithic period of the modern Indians.

The third paper is by Mr. S. V. Proudfit, whose early education among the mounds of Iowa and whose persistent search in the District have made him familiar with every village site in our neighborhood. Mr. Proudfit will locate the sites so far as known and show you a collection of many hundreds of type specimens found thereon. You will be astonished, as I was, at the great variety of forms and the remarkable finish of many of them.

Mr. Holmes will read the next paper, on the pottery and textiles of the region. He has discovered a process by which the markings upon the smallest fragment of pottery may be made to instruct us in the apparatus used by the potter, as well as in the material and stitch used by the weaver and the embroiderer.

The fifth paper is by Dr. Elmer Reynolds, on the shell-heaps of the Lower Potomac. From the brackish water of Port Tobacco to the mouth of the Bay the oyster abounds, and that it was a source of food supply to the aborigines is attested everywhere by immense shell-heaps, wherein are found human bones, pottery, and many stone implements. In many places the little circles that mark wigwam sites are also discoverable. Dr. Reynolds will present a short sketch of features the full description of which will occupy a volume.

The closing paper will be read by Mr. James Mooney, upon the Indians found in the Chesapeake region by John Smith, together with a description of their arts and affiliations.

As I stated previously, these gentlemen will give you only an outline of what will occupy a large volume when all the material is prepared; but from the accounts they will present you will be able to reconstruct in your imaginations the whole period, commencing with the day when the first American aborigine set foot in the Potomac valley to that day when, two hundred years ago, almost the last savage was deported.

It may not be amiss to state that the vice-president of the section has invited other investigators to map the points of occupation and historic importance in our region during the War of 1812 and the late Civil War. The series of maps thus constructed, together with a careful census in 1890, will furnish one of the best examples of anthropological stratigraphy known.

THE GEOLOGIC ANTECEDENTS OF MAN IN THE POTOMAC VALLEY.

BY W J MCGEE.

Midway between the beginning and the end of geologic history, or about the middle of the Mesozoic in the chronology of the geologist, there was an episode whose influence was felt in later ages by the aborigines of the Potomac valley. Man was not yet: Indeed the bird was but newly born of the reptile and the mammal of the fish, under the miscegenation of evolution; the dicotyledonous plant was just coming into existence and struggling against the primitive flora of the earth; the Potomac river flowed near its present course, but the Appalachian mountains were higher and the river-banks more

rugged than to-day, and not only was the Colorado unborn, but even the formations in which it has carved its colossal bed were not yet laid down. It was millions of years ago. Yet we know that the Potomac river gathered bowlders and pebbles from the mountains during its freshets, and that the waves of the ocean swept along adjacent shores the pebbles of Blue Ridge quartzite from which paleolithic man subsequently fashioned his rude tools.

During later eons the mountains were cut down by the rivers, the ever-energetic Potomac carrying whole cubic miles of sand and mud into the ocean to build the broad bench of lowland stretching from Washington to the coast, and thus gradually displacing the waters; and as the land-surface was attacked by rain and rivers and its debris swept into the sea, the growing continent rose until even the pebbly beach of the middle Mesozoic became an upland, and most of its pebbles were swept away, only remnants being left to crown the river bluffs and divides. This period of transportation from mountain to sea was long. Within it the bird-reptile and the dinosaur gave place to a long line of progeny, closing with the bright-plumaged bird of to-day, the horse and ox, the stag and camel, the elephant and mastodon, and all the higher mammals, save, perhaps, man; the dicotyledonous plants spread over the earth; the continent was changed from a great mountain range in the east, passing down into a moorland bounded by the western archipelago, to its present configuration; the Rocky mountains and the Sierras were elevated; and the Colorado cañon was carved to nearly its present dimensions.

Then came the second episode, in which the archæologist of the Potomac valley is interested: The previously mild climate chilled, the winters lengthened, the ice froze thick in rivers and bays, a continuous mantle of ice swept down from the north so far as to cut off the headwaters of the Delaware, the Susquehanna, and the Ohio, and anon the land sank until ocean waters crept up the slopes flanking the Chesapeake and the Potomac, and finally swept over the hills among which the National Capital is now embosomed. The water-level stood long at 150 feet, a less time at 200 feet, and briefly at fully 300 feet above present tide-level, and the ice-charged Potomac dropped bowlders and mud within its expanded estuary, while the waves built terraces about the hill-tops. Whether this cold was felt by human skin and this submergence seen by human eyes, no man yet knows.

Although short to the geologist, the period following this ice epoch

was long. Its duration is measured by the excavation of the inner gorges of the Potomac from Georgetown to Great Falls and of the Susquehanna from Port Deposit to Chickies; and during this period a primitive human population spread over the land.

There is a third episode, which is just at hand to the geologist, though enveloped in the thick haze of remote antiquity to the archæologist: Once more the northern ice-sheet invaded the land, creeping down the Hudson to its mouth, well down the Delaware, and again cutting off the head-waters of the Susquehanna and the Ohio. During this episode man flourished, despite the rigorous climate, and left his relics in the debris accumulated almost at the ice front; but this episode of cold was shorter than the last, the land was but little depressed, and no traces of its effects are found on the Potomac river. At its end the "to-day" of the geologist dawned.

From these three episodes and the intervening periods a chronology may be constructed: The first episode is that of the deposition of what geologists call the "Potomac formation," and the subsequent interval covers the Cretaceous and Tertiary periods; the second episode is represented by the deposits constituting the "Columbia formation," and the subsequent interval is the interglacial period, the vast duration of which has only recently been recognized; and the third episode is represented by the newer glacial drift, the great terminal moraine, the terraces of the Connecticut and Hudson rivers, the Trenton gravels, and contemporaneous deposits, while the subsequent interval of 10,000 to 100,000 years is the post-glacial period. Other and important episodes there were, but these three stand out in the geologic chronology of the Potomac valley like great mountains upon a hilly plain. Let us estimate their remoteness in familiar units: If the whole period of written history be a yard, then 3 or 5 or 10 long strides will carry us over the post-glacial period to the third and nearest episode; at the same rate we must walk 3 to 20 rods to span the interglacial period and reach the second episode; and still at the same rate we must walk from dawn to dark of a long day to reach the first episode.

The geologist has restored the geography of the period during which the Potomac gravels were laid down, but the configuration of land and water was so unlike the present that it would not be useful to reproduce it in detail. It will suffice to say that the shore line was ten to fifty miles west of the line along which the cities of the

Atlantic slope—Richmond, Washington, Baltimore, Philadelphia, Trenton, and New York—are now located. The deposits were coarse gravels along shore, sands with intercalated pebble beds and clay partings in the shoal waters, and masses of sandy clay with intercalated beds of sand in the offing.

During the long post-Potomac interval the land alternately rose and fell, and with its oscillations the sea alternately retreated from and encroached upon it; but the rising always exceeded the sinking and the shore line ever withdrew by successive steps. As the land was elevated its surface was cut down, valleys were excavated, and different formations were successively exposed along the flanks of the growing continent. The lowest of these is the Potomac formation. As the land rose higher and higher its margin—the shore deposit of an earlier eon—was channeled by ravines, its finer materials swept away, and only remnants of it left in the form of gravel-capped hills overlooking the falls of the James, the Rappahannock, the Potomac, the Susquehanna, and the Schuylkill. These gravel-capped hills are the factory-sites of paleolithic man, and it is by reason of them that the archæologist is interested in the Potomac formation. The land continued to lift until somewhat before the depression of the Columbia period, when it stood higher than now, and the Potomac, the Susquehanna, the Delaware, and the Hudson flowed in deep valleys through what is now the coastal lowland to far beyond the present coast line; but otherwise the geography was much the same as to-day.

During the Columbia period, or the first epoch of ice advance, the geography of eastern United States was greatly modified; and the configuration of the time may be readily depicted in terms of that of the present: To-day there is a lowland plain rising gently from the Atlantic and stretching mountainward to the elbow of the Delaware at Trenton and Philadelphia, to the embouchure of the Susquehanna into Chesapeake Bay, to the great elbow of the Potomac at Washington and Alexandria, to Fredericksburg, and to the bend of the James at Richmond. This lowland plain widens from a point at Sandy Hook to 150 miles at Cape Hatteras. Still further westward there lies an upland plain, 10 to 100 miles wide, overlooking the lowlands and overlooked by the mountains. Along the common boundary of the lowlands and the uplands the land surface drops from a mean altitude of 300 feet to less than 100 feet, and the rivers cascade from narrow rock-bound gorges into broad tidal

estuaries. Now, during the Columbia period, ocean-water overwhelmed nearly all of the lowlands between the present coast and the fall-line and washed the upland margin where now stand Fredericksburg, Washington, Baltimore, and Philadelphia; and north of Philadelphia it swept still further inland, submerging the uplands to 300 and even 450 feet above present tide level. Then the Potomac embouched into open ocean at the "Three Sisters;" at the culmination of the submergence shoal ocean-waters rolled over the highest land between Washington and the coast, and the Anacostia, the Patuxent, and Chesapeake bay were not; while during even the inferior stages of water the lower Potomac was an estuary many times broader and deeper than to-day. Such was the geography of the Columbia period.

The deposits of the Columbia period were the bowlder beds, gravels, and overlying brick clays exposed in every street cutting and cellar excavation in Fredericksburg, in Washington, in Baltimore, and in Philadelphia. They are best developed in what were the bottoms of estuaries when the water rose 150 feet at Washington and 200 feet or more at Philadelphia above present tide level; but while the Columbia formation consists predominantly of estuary deposits, a thinner sheet of this formation overspreads the lowlands everywhere from the line of cascades to the coast. Within the Columbia deposits there are abundant well-worn quartzite pebbles derived from the Potomac formation from which paleolithic implements might well have been fashioned; but no relics of man have ever been found—unless, indeed, Cresson's paleolithic implements from Northern Delaware were imbedded within them.

With the retreat of the great ice-sheet the land rose slowly and the waters gradually retreated until the previous configuration of the land and sea was in part restored; but the face of the emerging land was changed: Not only was the surface mantled and the valleys clogged with sediments, but the country was cleft for 300 miles by a profound break or displacement by which the lowlands were lowered and the uplands lifted. This displacement of the surface and the strata extends from the Potomac to the Hudson, and every river crosses it in a cascade; and the displacing is yet in progress—so slowly, it is true, that man has scarcely measured its rate, but so rapidly that the ever-busy rivers are unable to keep pace with it, and either cut down their upland gorges to tide level or silt up their lowland estuaries.

It is probable that some time during the long interglacial period, man, or his immediate progenitor, appeared and spread along the coasts and the rivers and over the uplands; but not until the second ice-invasion concentrated the fish of the rivers, the birds of the air, and the beasts of the forest and plain about the edge of the great ice-field did early man congregate in such numbers and lose the products of his arts in such abundance as to leave a record of his existence and his stage of culture. Man may be defined as the *fuel-using animal;* and it is one of the most significant facts of archæology that the record of human activity began, not in the mild spring-time, nor yet during the torrid midsummer, nor even in the fruitful autumn of the great secular seasons of the earth, within which mammalian life culminated in unparalleled wealth and magnitude of forms, but rather under the rigors of a secular winter. It is equally significant that the earliest traces of man in America are found, not beneath the sunny skies of the tropics but along the line shadowed by the Pleistocene ice-front. Perhaps paleolithic man was born during the interglacial period; but his birth-entry has been blotted from the records now accessible, and only the death-entry of some of his kin appears in the Trenton gravels of the Delaware, in the glacial gravels of the Ohio, in the terrace gravels of the Mississippi, and in the glacial mud of the Missouri—all deposits of a period during which the conditions were such as to give supremacy to the *fire-using animal.*

On the Potomac river paleolithic man has left traces, but they are not such as to fix the date of his occupancy of its shores. From the quartzite pebbles crowning the hilltops about Rock creek he manufactured thousands of implements, but he did not begin the manufacture until after the end of the Columbia submergence, else the implements would be found in the deposits. All along the Potomac the rude paleolith and the finished arrow lie alike upon the surface or in modern alluvium, and the geologist can only say that both are post-Columbia. From his own standpoint he can say nothing as to the development of the higher cultural phase from the lower, nor even as to the relative antiquity of the two. It seems probable indeed that the quartzite paleoliths of Rock creek were made long before the days of the arrow-makers whose relics skirt the shores of the Potomac and the Anacostia. At the same time it seems improbable that paleolithic man began to fashion quartzite implements from the Potomac gravels as early as his elder brethren began to manufacture

argillite implements on the shores of the Delaware; for, although the paleolith is easily and economically broken from argillite, it is only with difficulty and extravagance of labor that it may be chipped from quartzite pebbles, and the quartzites of the Potomac thus attest the potency of an imported fashion probably set on the Delaware. And the pendulum of progress swung slow in the infancy of the race; a century of that age was like unto a day of this; and so the quartzite-worker of the Potomac might have been thousands of years younger than the argillite-worker of the ice-front. But most of the paleoliths of the Potomac valley have been irrecoverably lost in consequence of the break by which the coastal lowlands were set off from the uplands: In the days of their manufacture the hills flanking the lower gorge of the Potomac were lower than now, and the implement-maker did not climb so high to his workshop as the collector climbs to-day; while the lowlands were higher and the estuaries narrower than to-day, and the shores haunted by the implement-user are now overrun by the tide and the lost implements buried in wave-swept alluvium.

Through the Potomac valley passes one of the most strongly marked geologic and cultural boundaries on the face of the earth: It was the shore-line during the later part of the Potomac period, and again during the eons of Cretaceous and early Tertiary deposition; it was again a shore-line during the first ice-invasion, the deposition of the Columbia gravels and brick clays, and the fashioning of the Columbia terraces; and it was the line of earth-fracture by which the coastal lowlands are dropped below the Piedmont uplands. It is known to students of modern manufactures as the *fall-line* because along it the rivers descend as abruptly as the land; and it is even more notable as a line of deflection than as one of declivity in rivers. The great waterways of the Middle Atlantic slope maintain their courses through Appalachian ranges and Piedmont hills alike; but on reaching the coastal lowlands they are turned aside literally by a sand bank little higher than their depth, and thence hug the upland margin for scores of miles before finally finding their way into the ocean. So the coastal lowlands are nearly isolated by the tidal bays and river-elbows along their inner margin. Measured along the fall-line, the Hudson is barred from the Rappahannock, 300 miles southward, by only 60 miles of land and unnavigable water. This remarkable physiography is now and ever has been reflected in the culture of the region. The pioneer settlers of the country ascended the tidal canals to the falls

of the rivers, where they found, sometimes within a mile, clear, fresh water, the game of the hills and woodlands, and the fish and fowl of the estuaries, and, as the population increased, abundant water-power and excellent mill-sites, easy ferriage, and practicable bridge-sites; here the pioneer settlements and villages were located; and across the necks of the inter-estuarine peninsulas the pioneer routes of travel were extended from settlement to settlement until the entire Atlantic slope was traversed by a grand social and commercial artery stretching from New England to the Gulf States. As the population grew and spread, the settlements, villages, and towns along the line of Nature's selection waxed, and many of them yet retain their early prestige; and the early stage-route has become a great metropolitan railway and telegraph route connecting North and South as they were connected of old in more primitive fashion. And just as these natural conditions influenced the white invader, so, and even more strongly, must they have influenced the migrations, settlements, industries, and character of the aboriginal monarchs of the Potomac waters and woodlands.

In the later geology of the Middle Atlantic slope, three episodes stand out so strongly as to overshadow all others. The first is that represented in the Potomac formation; the second is that of the first ice-invasion and the deposition of the Columbia formation; the third is the shorter ice-invasion, during which the earliest known relics of man were entombed in aqueo-glacial deposits; and then follows the present, by which these episodes of the past are interpreted and measured. In the archæology of the Potomac valley there are three salient and distinct stages, the first nearly coinciding in time with the last geologic episode. The first stage is that of the origin and development of the unknown ancestor of the race; the second stage is that of the human prototype who manufactured and used rude implements in an unknown way and for unknown purposes; the third stage is that of the dominance of savage races whose homes and habits, implements and weapons, are known; and there is the present stage of multifarious characteristics, one of which is the desire to interpret and elucidate the earlier stages. The common ground of the archæologist and geologist lies about where the series of stages in the development of man overlaps upon the series of episodes in the development of the earth. It is this common ground which is surveyed in these paragraphs.

THE PALEOLITHIC PERIOD IN THE DISTRICT OF COLUMBIA.

BY THOMAS WILSON.

During the thousands of years covered by the historic period the world has remained in ignorance of the prehistoric races of man which occupied the territory now belonging to our civilization. Although prehistoric implements and monuments were widely disseminated and to be seen on every hand, yet they remained unrecognized.

In the first decade of the XIX century the Danish savants, in their study of the Runic characters belonging to the early history of their country, discovered evidences of a human occupation earlier than any previously known. Their investigations developed facts which were accepted by the world at large, and the Prehistoric Ages of Man were soon classified as the Ages of Stone, Bronze, and Iron. The Stone Age was afterwards subdivided into the Paleolithic (ancient) and Neolothic (recent) periods. In the United States the Iron Age belongs entirely to history, and the Bronze Age, as such, had no existence. Our American Indian when found by the European was in the Neolothic Stage.

The branch of the subject assigned to me in this discussion is the existence of the Paleolithic Period of the Stone Age in the District of Columbia.

It is not every chipped stone that belongs to the Paleolithic Period. The implements of this period are of a particular type, and have individuality of form; so that the expert can distinguish them from implements of subsequent epochs or periods, even when of similar material and mode of manufacture.

The question under discussion is one of great importance, for it involves the existence of a people quite unknown, and their occupation of our country at a period in antiquity hitherto unsuspected. I grant that evidence of this period in Europe does not prove a like period in America. The problem in each continent must be worked out from independent evidence. No mere theory governing this conclusion in Europe should govern in America; but if the evidence that has proved the proposition in Europe is found in America, then it should be entitled to the same weight.

It is a fact, important in this discussion, that in those European countries most occupied by paleolithic man implements kindred to those found in the river gravels and belonging to the same epoch

have been found *on the surface* associated with objects of subsequent periods.

In investigating evidence of the existence of a paleolithic period in America the first question is, admitting, as we must, the existence of such a period in Europe, do we know any reason why it might not have existed in America? I can see no reason. If similar implements are found in America and in Europe, if they are found in similar positions and under similar conditions, I know of no reason why they should not establish, or at least point to, the same conclusion in America as in Europe.

In America, as in Europe, our only knowledge concerning the paleolithic period is necessarily derived from the implements themselves and from their position and surroundings when found. We have neither oral nor written evidence, nor have we tradition, concerning the implements or the people who made and used them. They belong to a period of geologic time which our most definite knowledge in America connects, as at Trenton, with the second glacial epoch.

Paleolithic implements have been found in the United States which correspond in every particular with those of Western Europe—correspond in form, appearance, material, mode of manufacture—in short, they are the same implements in every essential. They have been found under substantially the same conditions—sometimes on the surface, sometimes deep in the river gravels. We have heard from Mr. McGee how these implements were imbedded in the river gravels at Trenton, and his opinion is that their antiquity dates to the glacial epoch. (See also his article in Popular Science Monthly, XXXIV, 1888.) Little Falls, Minn.; Jackson county, Indiana; Claymont, Delaware; Loveland, Ohio, and other localities tell the same story and furnish the same evidence.

These finds of proved antiquity are in great numbers, and they demonstrate both the existence and the antiquity of a paleolithic period in America. This cannot longer be doubted. It is the conclusion of all the scientists who have studied the question. I have mentioned Professor McGee. It goes without saying that Dr. Abbott believes it. Professor Putnam was one of its earliest believers. Professors Wright and Haynes have given it their adhesion, and so have all the geologists who have examined the localities where the implements have been found. Professor Haynes, of Boston, prepared Chapter VI, entitled "The Prehistoric Archæology of North Amer-

ica," and just published in the Narrative and Critical History of of America, page 329. He (with Professor Putnam) recognized the great importance of the finds of these paleolithic implements by Dr. Hilborne T. Cresson at a depth of several feet in the undisturbed ancient gravel terrace of the Delaware river, near Claymont, Newcastle Co., Delaware. The artificial origin of these implements appears upon inspection. They repeat the punch marks, the hammer strokes, the conchoidal fracture, all of which combine to shape them for a general purpose and to show conclusively that they are the work of man. It is the repetition of these items of testimony in hundreds and even thousands of specimens that makes the evidence so convincing.

Mr. McGee, in his article on "Paleolithic Man in America," in Popular Science Monthly, XXXIV, 1888, speaking of the Trenton implements, gives his opinion thus: "When examined collectively, the correspondence in form and mode of manufacture between symmetric 'turtle-backs,' 'failures,' 'spawls,' 'chips,' and miscellaneous fragments compels the cautious geologist to question whether *any are demonstrably or even probably natural;* the series is not from the certainly natural to the doubtfully artificial, but from the *certainly artificial* to *the doubtfully natural.*" (Italics my own.)

Implements similar to those referred to have been found by thousands in the District of Columbia, as well as all over the United States, and I have ventured to call them paleolithic. True, they have been found principally upon the surface or in the alluvium which is its equivalent. They are not presented as furnishing complete proof of the *antiquity* of the paleolithic period, but they have been found *in situ*. They are part of the *res gestæ* and must be accepted as evidence in the case, tending, at least, to establish the *existence* of a paleolithic period in the District of Columbia.

That the implements found in the District of Columbia and the Potomac valley, illustrated in Plates I and II, were of human manufacture, and that they belong to the paleolithic period, can be demonstrated by comparing them, 1st, with one another; 2d, with like implements found in the river gravels in the United States; 3d, with like implements found in other countries, both in the gravels and on the surface.

The details of this comparison would extend to—

Form and appearance; material; mode of fabrication; use and purpose.

In contrast to the similarity of paleolithic implements will be found an equally marked dissimilarity of implements belonging to the neolithic period, whether of Europe or of America, extending to details of appearance, mode of fabrication, material, and purpose. The wider the geographic range of this comparison and the more minute its details, the more conclusive it becomes. For instance, if, instead of confining our comparison to paleolithic implements from the District of Columbia, we include those from all over the United States; and if, instead of comparing them with like implements from England and France, we extend our comparison to those from Africa and India, we find them all alike, and consequently all are true paleolithic implements.

PALEOLITHS OF THE UNITED STATES COMPARED.

Similarity of Form and Appearance.—Paleolithic implements from the District of Columbia, indeed from all over the United States, are always chipped, never polished; are almond-shaped, oval, or sometimes approaching a circle; the cutting edge is at or towards the smaller end and not, as during the neolithic period, towards the broad end. They are frequently made of pebbles, the original surface being sometimes left unworked in places, (see *b* and *c*, Plate II), sometimes at the butt for a grip, sometimes on the flat or bottom side, and sometimes, in cases of these pebbles, on both sides. The differences between the natural and artificial portions are readily distinguishable.

These implements are exceedingly thick compared with their width, so much so as to make it apparent that they were never intended to have a shaft or handle after the fashion of either the axe or the arrow or spear head. This statement does not apply solely to the larger implements, weighing several pounds; for there are small ones of varying sizes perfect in themselves with an evidently intentional protuberance which renders hafting impracticable.

The above-noted features bring into greater prominence the important fact that the implements are all of a common type. They are all alike, and yet not alike. They are not copies, yet there is no mistaking their likeness to each other. When this likeness is found to extend to thousands of implements, coming from every part of the United States, it produces in the mind of the examiner a conviction impossible to escape.

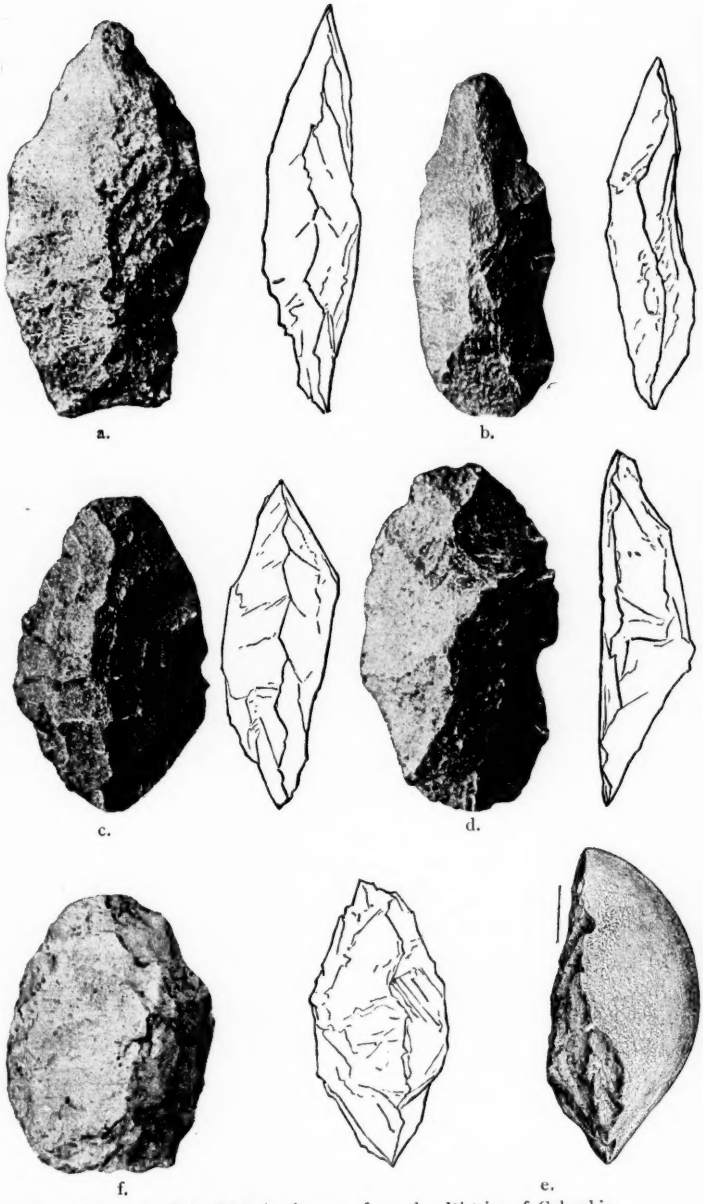


PLATE I.—Paleolithic implements from the District of Columbia.

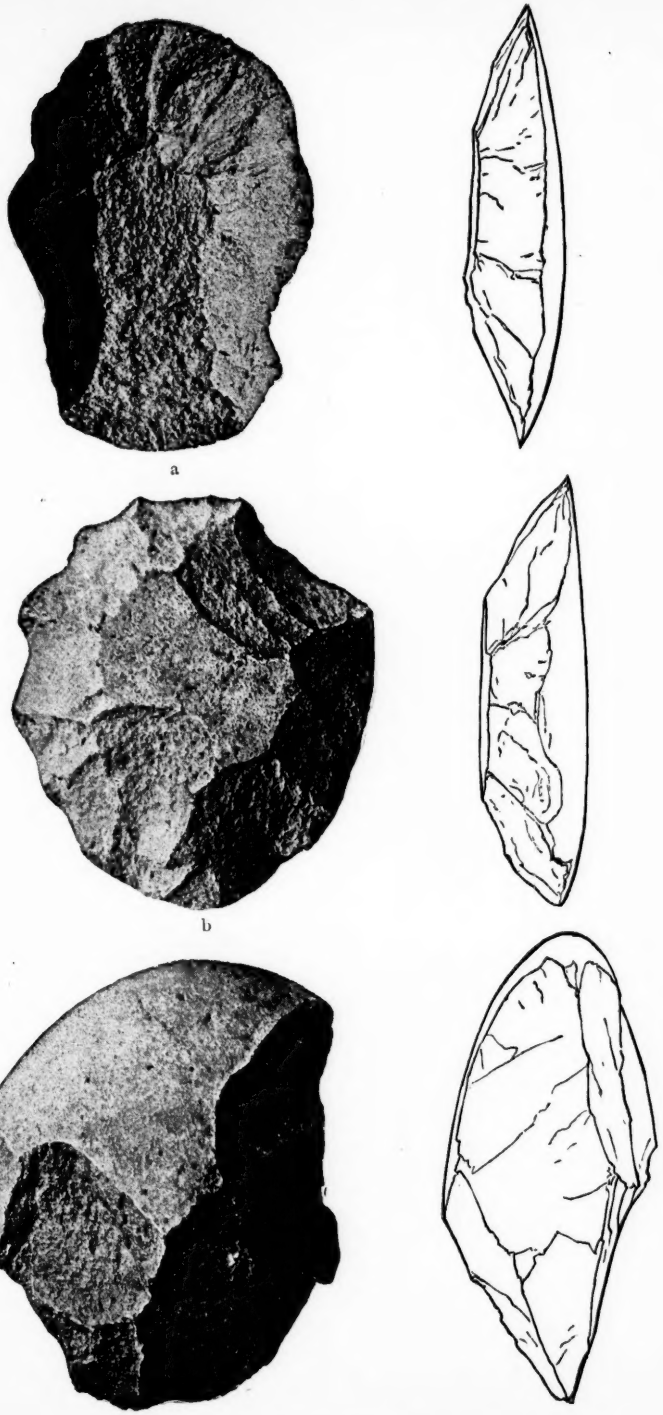


PLATE II.—Paleolithic implements from the District of Columbia.

XUM

The paleolithic implements found in the District of Columbia compare favorably with those collected by Dr. Abbott at Trenton, and they are equally if not more like the Chelleen implements found in Europe and Asia.

The greater portion of paleolithic implements from Europe are of flint. Flint is scarce in the United States and we have but few flint implements in any prehistoric epoch. We have, however, some of these flint paleoliths from Texas and more from Utah and New Mexico, and I invite a comparison of them with the Chelleen implements of flint from Western Europe.

The paleolithic implements of the United States were mostly made of quartzite. I invite a comparison of specimens of the same material from the Bois-du-Rocher, from Toulouse, from the Caverns of Creswell Crags, Derbyshire, England, and those from the laterite near Madras, in India.

Dissimilarity of Paleolithic and Neolithic Implements.—The culture of the neolithic period spread over the world, and the implements are well defined and known to all archæologists. The American Indian belonged to this period of culture, and the majority of his implements are similar to those in other parts of the world. Their dissimilarity from the paleolithic implements now under consideration is evident on first inspection and becomes more apparent the closer the scrutiny.

They differ in form, in thickness; are differently manufactured; are made of different material, and have a different appearance. The cutting end of the implement is reversed, being at the broad end.

The distinct type of implement called paleolithic is not known to have been used by the American Indian. The paleoliths are not Indian axes, nor hatchets, nor scrapers, nor knives, nor spear or arrow heads. Of the thousands of Indian mounds, cemeteries, graves, or monuments of whatever kind which have been explored, not one has ever yielded these paleolithic implements. In circular No. 36 from my office I propounded the question whether paleolithic implements were found in mounds, tombs, or other ancient structures, or associated with other ancient implements. In the hundreds of responses received from every part of the United States there is no affirmative answer. They may have been found associated with other implements on the surface, but in Indian mounds or graves, never.

Similarity of Fabrication.—Whether the particular piece chosen by the prehistoric workman for the manufacture of these implements was a rounded and smoothed pebble or a rough block, his mode of procedure appears to have been the same. He struck off the flakes by blows, probably with a hammer stone. The fracture left a conchoid of percussion, locating the point of blow with certainty (as shown in the middle portion of *e*, Plate II.). In many of the larger and ruder implements it would appear as if the work was begun and the heavier flakes knocked off by the aid of a punch, probably a stone point, of which the marks are at times visible and by means of which the stroke could be confined to a single spot. In many cases the smaller flakes have been struck from one side and then from the other until the implement was brought to an edge. Not infrequently the edge shows evidences of use, sometimes being battered rough and at other times being worn smooth. None of them are polished, as were the implements of the neolithic period.

Material.—Paleolithic man, whether of Europe or of New Jersey, employed for his implements material which possessed certain qualifications. It was necessary that it should be hard that it might not break or crumble; tough, that it might hold an edge; homogeneous (at least approximately), that it might be flaked in any direction; and it was usually of such substance as to break with a conchoidal fracture.

The materials of the implements found in the District of Columbia and throughout the United States possess in a surprising manner the above requirements. They are usually quartz, quartzite, and argillite, and for the most part were pebbles, frequently water-worn.

On the other hand, the North American Indian and his prehistoric ancestors of the neolithic period used all sorts of eruptive rocks for his implements. He made many also out of clay, rocks, slate, shale, and the like, any material serving him which would grind to a smooth surface and make a clean edge, whether capable of being chipped or not. He also used largely the peculiar material chert, which closely approaches the European flint, and, like that rock, may be shaped by a distinctive mode of chipping quite different from that exhibited by the paleoliths.

The line of demarcation can be plainly drawn between the two classes of implements.

Use and Purpose.—It is my opinion that the paleolithic implements of the United States correspond in use and purpose, as they

do in their other qualities, with the Chelleen implements of France. I think that the Chelleen implement was intended to be held in the hand and used as a knife, axe, or other cutting implement, either as a tool or weapon. It was the only implement the man of that epoch possessed.

I surmise their purpose and use by surmising the needs of the man who used them. These comparisons might be continued indefinitely, and the more thorough the comparison the greater will appear their similarity to other paleolithic implements and their dissimilarity to neolithic implements.

When I compare implements found by the thousand on the hills and in the valleys around the city of Washington with those, also found by the thousand, distributed over the United States from the Atlantic to the Pacific, and find them to be substantially the same implement; when I compare those from America with the equally great number from Europe and the Eastern Hemisphere, and find them all substantially the same implement; and when again, comparing them with the implements of the neolithic period, whether European or American, I find them to be unlike except in a few and insignificant details—when I review all these facts I am forced to the conclusion that the implements I exhibit from the District of Columbia are of the same paleolithic type as those found in the gravels at Trenton and elsewhere, and that they tend to prove the existence of a paleolithic period in the United States.

ANCIENT VILLAGE SITES AND ABORIGINAL WORKSHOPS IN THE DISTRICT OF COLUMBIA.

BY S. V. PROUDFIT.

The term "village site," as employed in these notes, is not to be understood as signifying a place formerly occupied by a compact group of dwellings, but rather one where their proximity to each other was interrupted by considerable spaces devoted to agricultural and other purposes. Such a community is described by Smith in his exploration of this valley.

"Their houses are in the midst of their fields or gardens, which are small plots of ground, some 20 (acres), some 40, some 100, some more, some lesse: sometimes from 2 to 100 of these houses togither, or but little separated by groves of trees. Neare their habitations is

but little small wood or old trees on the ground, by reason of their burning of them for fire."

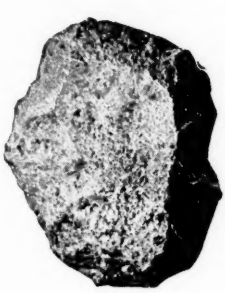
A community of this character occupied the eastern bank of the Anacostia, from Giesboro' Point on the south to within a short distance of Bladensburg on the north; not a continuous line of houses, but a succession of them at short intervals and at points convenient to the river.

The Anacostia has at this place, on its eastern shore, low-lying banks that stretch out into a comparatively level plain. The western shore line is for the greater part swampy in character, and offers but little inducement to a permanent occupation by either fishermen or farmers, and the ancient people of Nacotchtanke were both, as well as hunters and warriors. Quoting again from Smith: "And, lastly, Nacotchtanke, with 80 able men. The river, 10 miles above this place, maketh his passage down a low, pleasant valley, overshadowed in manie places with high, rocky mountains, from whence distil innumerable sweet and pleasant springs."

The principal part of Nacotchtanke seems to have been about due east of the Capitol, for the fields at this point give greater evidence of occupation than at most others, though indications of Indian occupation are to be found at nearly all points of the valley. It should be noted that the dwellings were in most cases close to the bank of the stream. A line drawn parallel with the shore and three hundred feet distant would include the greater part of the houses. Within the area thus indicated may be found to-day every variety of stone implement common to the North American Indian. Arrow-heads, spear-heads, knives, drills, perforators, scrapers, sinkers, polished axes (both grooved and ungrooved), sharpening-stones, pipes, slate tablets, pestles, mortars, cup-stones, hammer-stones, as well as that rude axe-shaped implement of chipped quartzite which has yet to receive a name. (See *b*, Plate III.) Associated with these, and forming no inconsiderable part of the remains, are found partly worked implements—some broken, others worked into the first rude forms of the arrow-head or knife and then abandoned (see *a* and *d*, Plate III, and *d*, *e*, and *f*, Plate IV) and abounding everywhere flakes, chips, and pebbles of quartz and quartzite having but a chip or two struck from the original surface.

These fields have been under cultivation for many years, and are regularly visited by local collectors, yet they are to-day, in places, fairly strewn with the wreck of the old village life.

a



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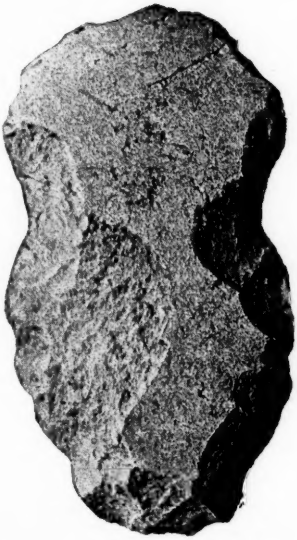


b

PLATE III.—Rude chipped implements from the District of Columbia.

XUM

XUM

In the manufacture of cutting and piercing implements the materials used were quartz, quartzite, argillite, and a ferruginous sandstone, with occasionally a piece of jasper or chert. The quartz and quartzite, the materials most frequently employed, were to be had in abundance from the never-failing gravel-beds of the Potomac valley, and that this source of supply was utilized is amply established by the many half-finished implements showing the surface of the pebble yet untouched. The argillite I have not satisfactorily located nearer than the coal-fields of the Upper Potomac. A description of the various implements in detail must be reserved for a future occasion.

One implement, however, I deem worthy of special mention—a long, thin blade of quartzite, pointed at each end and sharpened on the edges. This type, frequent at Nacotchtanke, is very rarely found on the other village sites of the District. Professor Mason has aptly named it the "shad knife," and its form seems to warrant the use implied by the appellation.

In addition to the stone relics which this field affords, it should be observed that an abundance of pottery, in fragments, is to be found—one of the unfailing evidences of permanent aboriginal occupation.

On the map used in connection with this paper it will be observed that several other village sites are marked. The most important of these is the one stretching along the eastern shore of the Potomac from the lower reservoir to the Little Falls. This site lies on a table-land overlooking the river and at the base of another line of hills which rises from the eastern side of the plateau. The extent of this village is nearly equal to that of Nacotchtanke (Bennings), and it affords the same abundance of relics, which do not differ materially in character from those found at the latter place.

The other village sites located within the old District lines and designated on the map (see Plate V) are (1) "Red Bank," on the west bank of the Anacostia and southeast of the Reform School; (2) the Carroll place in Washington, north of Garfield Park and between First and Second streets S. E.; (3) crest of the hill on the Virginia side of the Potomac, at Chain Bridge; (4) opposite the foot of Analostan Island, on the Virginia shore; (5) near the mouth of Four-Mile Run, Virginia; (6) on the farm of Isaac Crossmun, at Falls Church, Virginia; (7) "Namaraughquena," at the south end of Long Bridge.

XUM

AN ABORIGINAL WORKSHOP.—Piney Branch is a small stream that makes its way through the hills that lie north of the city. From the point where it is crossed by the Fourteenth-street road to its union with Rock creek, it passes through a deep ravine, rocky in some places and in others made up of steep, gravelly hills that descend with considerable abruptness to the bed of the stream. The sides of the ravine and hill-tops are covered by a natural growth of forest trees. On the north side of the stream, and just below the Fourteenth-street bridge, may be seen the remains of an ancient workshop which deserves more than passing attention, as here occur the relics which are classed as paleolithic by some archæologists and which, in their opinion, furnish conclusive proof of the existence of paleolithic man within the District.

From the bed of the creek to the brow of the hill, and for some distance back, the ground is littered, and in many places covered to the depth of several inches, with chipped stones, chips, and flakes. Many of the stones show but slight marks of chipping, a few pieces having been struck off without materially modifying the original form. Others, however, and they may be numbered by the thousand, have been worked into definite form. The material used was the quartzite pebble, which composes to a large extent the gravel beds of the hill. The forms vary from that of the split pebble, with the outer face worked at the edges, leaving the center with its original surface untouched (see *c*, Plate III, and *a*, Plate IV), to that of the almond shape, chipped on both sides (see *b*, Plate IV). While these ruder forms constitute for the greater part the mass of the remains, thin knife-shaped implements of the same material are also found (see *c*, Plate IV). Most of these are broken, but perfect specimens occur frequently. While an occasional arrow-head has been found, not a scrap of pottery or other indication of residence marks the place.

On the level ground at the top of the hill the earth in places is covered with small chips and flakes, and mingled with them the butts and tips of broken knives. The comparative absence of rough material, large chips, and rude forms, noted on the hillside below, and the presence of small chips and finished forms, is at once apparent, and is not without suggestion as to the relative character of the work prosecuted in each place.

The area covered by this workshop, embracing several acres in extent, is not confined to the north side of the branch, but includes

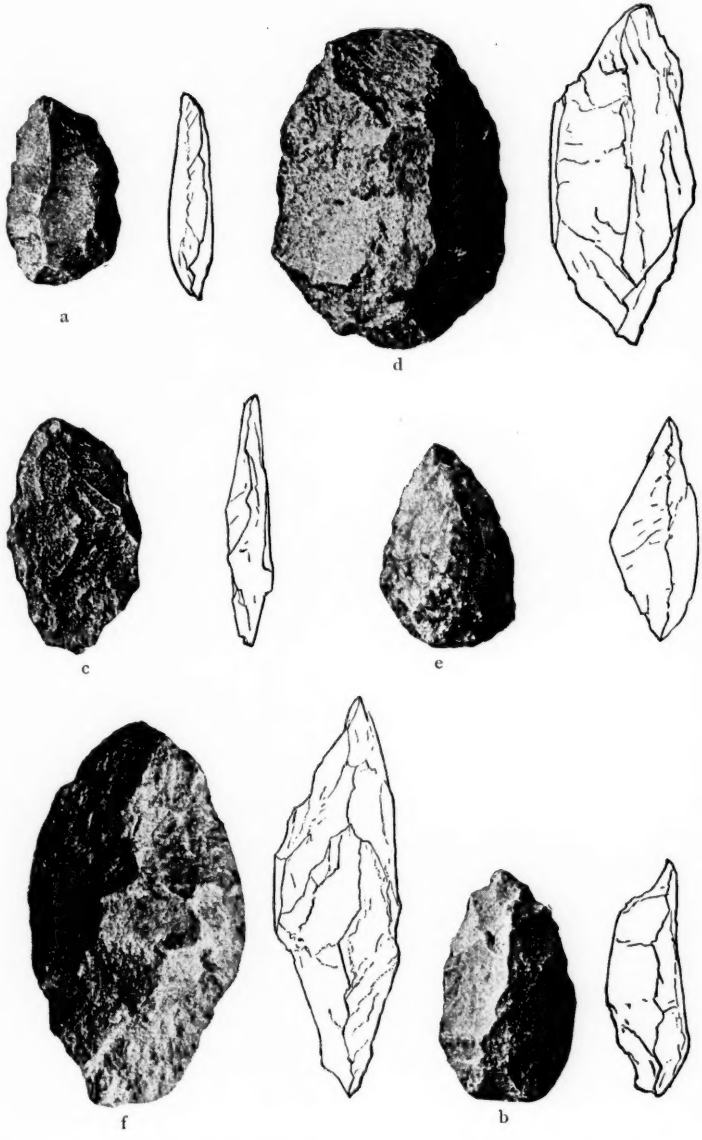


PLATE IV.—Rude chipped implements from the District of Columbia.

both sides, as well as the very bed of the stream. The greater part of the work, however, was done on the north side, and any attempt to state its amount would hardly be received with credence by one who has not visited the place and made it a study.

Similar workshops, though less in extent, are found in several places on Rock creek below Piney Branch. In some instances these places cover but a few square yards; in others the work is scattered over the hillsides in profusion.

My own conclusion as to the relics found at these points is that they are the resultant debris of Indian workshops, where material was roughly blocked out, to be afterward fashioned into knives, spearheads, &c.; and that no good reason is yet apparent for attributing their origin to paleolithic man.

SOAPSTONE QUARRIES.—Among the remains found on the village sites fragments of soapstone vessels and other forms of the same material frequently occur, and in sufficient quantity to establish the fact that the value of soapstone for vessels and other articles of domestic use had received substantial recognition. The material is found in many places in the Potomac valley, and several aboriginal quarries have been located within the limits of the District. The most notable of these is the Rose Hill quarry, about three miles north of the city and near Tenleytown, a full account of which was furnished by Dr. Reynolds in the 13th Annual Report of the Peabody Museum. An examination of the place shows extensive workings, prosecuted intelligently and with considerable success. Pits and trenches, now filled with trees and underbrush, mark the hillside on every hand, and rough fragments of broken and unfinished vessels are scattered about, half buried in the forest soil that has accumulated since the abandonment of the quarry. The comparative absence of fragments would seem to indicate that the process of manufacture at this place was not carried farther than to reduce the original block to a vessel convenient in size and weight for transportation.

At a point one mile below Falls Church, Virginia, on the old Febrey estate, I found a small but interesting soapstone workshop. It is located on a hillside overlooking Four-Mile Run and about one-fourth of a mile below a recently worked soapstone quarry. Large pieces of the unworked stone and fragments of unfinished vessels covered the ground, which occupies an area of not more than half an acre in extent. No perfect vessels were found, and the best speci-

men obtained was a small core worked out from the interior of a vessel in the process of its construction. Several quartz implements suited for working the stone were found mingled with the debris. The amount of material on the ground was comparatively small, when compared with that at the Rose Hill quarry, and probably it had been carried from the quarry above, where the recent operations have obliterated all traces of ancient mining, if any existed. Careful and repeated search in the neighborhood of this quarry only resulted in the discovery of a few pieces of unfinished vessels—enough, perhaps, to justify the conclusion that this quarry furnished the material used at the workshop.

SUMMARY.—Taking the evidence of the fields of to-day, we are enabled to supplement, in some degree, the brief historic account of the early people of the Potomac. Where recorded observation has fallen short the archæologist may thus take up the study of this primitive period in the less imperishable, though unwritten, record left by this vanished people.

Having identified a camp site by means of historical evidence, it is easy, by a study of its character, to determine the location of others of equal importance, though not mentioned by the historian, especially where the remains are so abundant and distinctive in character as they are in this region. By adding the deductions to be drawn from a comparative study of the archæologic material to the historic facts we may determine the status and rank of this people among the aboriginal tribes of North America.

POTTERY OF THE POTOMAC TIDE-WATER REGION.

BY W. H. HOLMES.

Introductory.—The manufacture of earthenware was one of the few simple arts practiced by the primitive inhabitants of the Potomac tide-water region. Clay was employed chiefly in the construction of vessels for domestic purposes, and fragments of the fragile utensils were left upon camp sites or built into the gradually accumulating masses of kitchen refuse. These sherds constitute the chief record upon which we rely for our knowledge of the art.

Meagre references to the use of earthen vessels by the natives are found in the writings of the first colonists, and it is known that

feeble remnants of the Virginia Indians have continued to practice the art even down to our own time.

It is difficult to say whether or not pottery was universally employed by the tribes who dwelt upon or who from time to time visited our shores, for its durability varies greatly, and the village sites that now furnish us no specimens whatever may in former times have been well supplied.

It may further be noted that the duration of the practice of the art cannot be definitely determined; for, although fragments may be found from base to summit of shell heaps and mounds that must have been hundreds of years building or accumulating, we cannot as yet say that a long paleolithic epoch of occupation did not pass entirely without pottery.

Whole vessels are rarely found, and such as we have are recovered from graves where they were deposited with especial care and at considerable depth. From camp or village sites and from all artificial deposits and accumulations where they are mere refuse they are recovered in a fragmentary state and in pieces so small and so entirely disassociated that full restorations are exceedingly difficult.

There is enough, however, to give a pretty clear idea of the scope of the art and of the character of its products—enough, it may be added, to enable us to form a definite notion of the culture status of the pre-Columbian peoples as well as to throw considerable light upon their ethnic affinities.

Authors.—Little has been written upon this branch of our local archæology. Titian Peale and Louis A. Kengla have given it a passing notice. Hariot, historian of the Roanoke expedition of 1587, gives a brief but lucid description of the use of earthen vessels by the natives, illustrating the subject by a copper-plate engraving made by De Bry from the original drawing of John White, an artist and a prominent member of the Roanoke colony.

Hariot says that "their woemen know how to make earthen vessels with special cunninge and that so large and fine, that our potters with thoye wheles can make noe better: ant then remove them from place to place as easelye as we can doe our brassen kettles. After they have set them uppon an heape of erthe to stay them from fallinge, they putt wood which being kyndled one of them taketh great care that the fyre burne equally rounde about. They or their woemen fill the vessel with water, and then putt they in fruite, flesh, and fish, and lett all boyle together like a galliemanfrye, which the Spaniards

call, olla podrida. Then they putt yt out into disches, and sett before the Companye, and then they make goode cheer together."

Collections.—The collections of vessels and sherds that I have been permitted to study cannot boast of any great degree of completeness, and fall far short of what systematic research will in the near future put within our reach. The National Museum has a series of fragments collected by O. N. Bryan, E. R. Reynolds, J. D. McGuire, and others, and I have been granted the privilege of examining the private collections of Dr. E. R. Reynolds, Mr. S. V. Proudfit, and Mr. W. H. Phillips. A valuable addition to the collections from the upper Potomac was recently made by Mr. W. K. Morehead, who has kindly placed the few pieces of earthenware at my disposal.

Localities.—The localities represented are quite numerous and very generally distributed along the shores of rivers and bays.

Material.—The clay employed is of varying degrees of purity and is tempered with divers ingredients. These ingredients have varied with tribes and with localities; they comprise all grades and varieties of sand and artificially pulverized rock, such as quartz, schist, steatite, etc. Pounded shell was extensively employed, but the fragments of this substance have in many cases decayed and dropped out, and are represented by the irregular pits which now characterize many of the sherds.

The percentage of these ingredients is often surprisingly great, as they constitute one-half or even, in cases, three-fourths of the mass.

Upon what theory these tempering substances were added to the clay we are unable positively to determine. We conjecture that strength, porosity, resistance to heat, etc., were qualities especially sought, but we cannot say that superstition did not have something to do with it. The potter may have believed that the clay at hand, unmixed with ingredients from particular localities or of certain kinds, would subject the utensils made from it to the influence of malignant spirits, or from a vision or dream he may have learned that a vessel not containing a proper amount of shell material would never be well filled with chowder or with terrapin.

Manipulation.—Of the preparation of the clay we can say nothing, save through our knowledge of modern practices, but the relics give us many clues as to the methods of building and finishing the ware. Systematic coiling was not practiced, but the walls were in

cases built up by means of more or less narrow bands of clay, which were pressed together and smoothed down by the fingers or a suitable tool. In many cases the vases break along the junction lines of the original bands.

To what extent molds such as baskets, gourds, and the like were used we cannot clearly determine, but that they were used is pretty certain. Exterior impressions of basket-like textures are not uncommon. The surfaces were, to a limited extent, shaped and finished by the use of improvised paddles.

Form.—The shapes of this pottery do not show a very wide range of variation, for the stamp of the preceramic originals are still upon them, and the differentiation of use and office had not yet gone so far in modification and multiplication of forms as it had with the wares of the more advanced races of the west and south. The pot, with all that the name implies, was still the leading idea, and now furnishes the type of form. Its outline varies from a deep bowl, through many degrees of rim and neck constriction and expansion, to a rather wide-mouthed, sub-bottle shape. There is, however, no end of variation in detail within this narrow range of general conformation. Rims are scalloped, thickened, incurved, recurved, and otherwise modified. Necks are straight and upright, swelled out or gently or sharply constricted. Bodies are globular or oblong, and are rounded or pointed below. Illustrations of typical forms are given in *a*, *b*, *c*, and *d*, Plate VI. Handles, legs, knobs, and projecting ornaments are rarely met with.

A few pipes and some round, perforated pellets—perhaps beads—are the only additional forms that I have seen.

Size.—The size is generally medium, the capacity being a gallon, more or less; but minute forms, as well as very large ones, are not uncommon.

Use.—Use was chiefly domestic and generally culinary, as the sooty surfaces and blackened paste clearly indicate; but the vessels were not infrequently diverted to sacred and ceremonial uses, as we know from historic evidence. It is instructive to note, however, that such special functions had apparently not yet, as in the west and south, given rise to especial forms.

Surface Finish.—Surface finish was necessarily not of a very refined kind. The fingers or a polishing tool sparingly used gave all neces-

sary evenness of surface. In many cases fabric impressions, acquired in construction or afterwards applied for effect, cover the entire exterior surface. Often these markings were afterwards smoothed down and nearly or quite obliterated, indicating that they had no important æsthetic office. Other similar impressions from fabrics or fabric-covered paddles were afterwards applied, very certainly on account of some æsthetic or superstitious office.

Ornament.—Much of this ware is decorated in simple but effective ways. We cannot draw a very definite line between those features that exist through accidents of manufacture and those having æsthetic or mixed æsthetic and ideographic office; but it is sufficient for our purpose to classify all patterns that show evidence of design as ornament. The decorations are confined to the neck and rim of the vessel. They were impressed by means of numerous improvised stamps or were executed with the fingers or a pointed implement. The most usual method was by the employment of bits of hard-twisted or neatly-wrapped cords or thongs. If a series of short indentations was desired the cord was doubled between the thumb and finger or laid across the end of the finger and pressed sharply into the clay. Longer lines were made by laying the cord singly upon the clay and running the finger along it for the length of the desired impression. This was repeated until the pattern was finished.

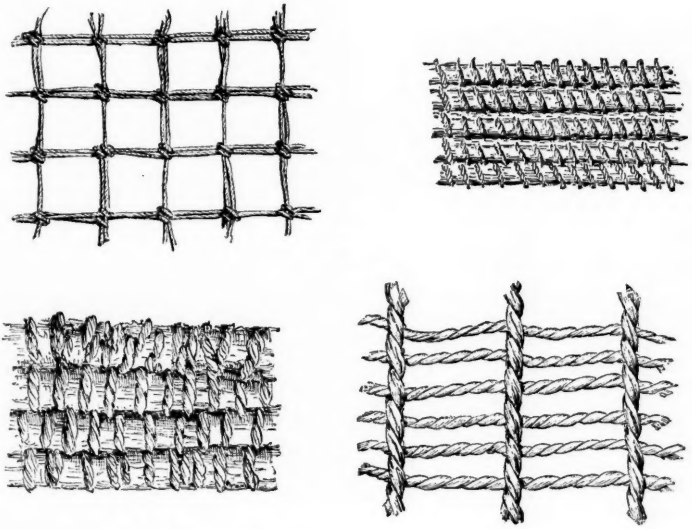
As a rule, the figures were undoubtedly suggested by textile combinations, and in many cases served simply to emphasize or carry out more fully the markings received from the basket or net-mold employed in construction. Similar effects were secured by incising, trailing, or puncturing with a pointed tool.

It is interesting to note that the tattoo marks upon the "foreheads, cheeks, chynne, armes, and leggs" of the "chief ladyes" of the Chesapeake, as shown in John White's illustrations of the Roanoke expedition, are identical with the figures upon the pottery now exhumed from our shell-heaps.

Fabrics.—It happens that a study of the textile art of the Chesapeake tribes becomes a natural appendix to that of the fictile art.

Historic Fabrics.—From historic sources we know that the Virginia Indians produced a variety of textile articles, wattled structures for shelter and for trapping fish, mats for coverings, hangings, and carpetings, nets for fishing, besides baskets, nets, and pouches for various ordinary uses.

Types of form, pottery of the Potomac Valley.



Examples of fabrics impressed upon pottery of the Potomac Valley.

PLATE VI.

Fabrics from Pottery.—From impressions upon pottery we get additional evidence upon the subject—much more indeed upon the technique of the art than can ever be known from any other source. Casts in clay from the potsherds give us numerous restorations of the construction of such cloths, nets, and baskets as happened to be associated with the potter's art. Four examples are presented in Plate VI.

That all are aboriginal in origin cannot be proved, but there is nothing in them that seems out of harmony with the known art-status of the Indian tribes. The presence of nets identical with the fish nets of the European affords the only reason for making the query.

Indications of Æsthetic Status.—The condition of the æsthetic idea among our predecessors must receive a moment's attention.

Form.—The *shapes* of the earthern vessels are in a great measure inherited from basketry, but they are conditioned to a considerable degree by characters imposed by material, construction, use, and the rather weak promptings of the æsthetic idea. As a rule they are not crude, but rather shapely and graceful.

Decoration.—In decoration textile ideas inherited from basketry still held almost undisputed sway, and the timorous essays of taste did not extend beyond the shadow of the mother art.

The impressions of nets, baskets, and other textiles employed in manipulating the clay are in many cases ornamental in effect and were probably so regarded by the archaic potter.

We are reasonably safe in assuming that the elaboration of textile suggestions by means of stamps and pointed tools was the result to a certain extent of æsthetic promptings; but there is another element to be considered—that of the inheritance of forms and ideas from antecedent stages of art and of the conservatism of habit and superstition that tends so decidedly to retain and perpetuate them even when meaningless.

The *amount* of decorative elaboration is, therefore, not a *correct* measure of the condition of æsthetic development, although it *is* a measure of the condition of that body of features in the art that become the exclusive possession of the æsthetic idea after habit and superstition loosen their hold.

Ethnic Significance.—I have myself gathered potsherds of the above class all along the coast from the Chowan river, in Carolina, to the

eastern shore of Nantucket, and have seen specimens from all parts of the Atlantic coastal belt. Among them all there is no hint of other ethnic conditions than those known through historic channels. All indicate an even plane of barbaric simplicity. There is fair homogeneity of character as well as correspondence in stage, indicating ethnic unity.

Every relic of art has an ethnic value, and even these stray fragments of earthenware, when all the evidence attainable has been gathered about them, may be found useful in the determination of ethnic questions.

In glancing at the linguistic map of the United States prepared by Major Powell and his assistants I find a general correspondence between the distribution of this family of earthenware and the area assigned to the Algonkian peoples.

THE SHELL MOUNDS OF THE POTOMAC AND WICOMICO.

BY ELMER R. REYNOLDS.

The deposits to which attention is invited are principally found on the left or Maryland shore of the Potomac, in the counties of Charles and St. Mary's. The map at the end of this article sufficiently indicates their distribution.

It is proper to state that I have found it convenient to classify these deposits as Mounds and Shell-fields. The deposit is called a mound when it reaches a height of five feet or more. The deposit is considered a shell-field when the height is less than five feet and the remains extend over a large area.

In going down the river the first shell-heaps which have been observed are at Nanjemoy, in upper Charles county. The numerous deposits and relics of camp life here are worthy of special mention only because they are tokens of ancient oyster fishing in a region where shell-fish no longer exist. The cause which led to the decadence of the fishery at this northern limit may be ascribed to the filling up of the stream, the silt from the cultivated fields covering and destroying the once prolific beds.

Similar small deposits are found a few miles below, along the shores of Port Tobacco river.

The first deposit on the western or Virginia shore is above Mathias Point, in King George county. This is a shell-field too deep for

cultivation, its depth varying from one to three feet. It follows the shore for several hundred yards, its diameter ranging from one hundred and fifty to two hundred feet. The shells are much decomposed and are employed somewhat as a fertilizer. They have been identified as the *Ostrea virginica*.

In a small fishing camp north of the deposit were found numerous chipped axes, arrows, spear-points, and sherds of pottery.

The largest and what may be regarded as the typical mounds of the Potomac are situated near Newburgh, Md. The larger of these deposits is found on the southern extremity of a high peninsula which slopes steeply down between Pope's creek and the river. The surface embraced by this extraordinary deposit is at present something less than seven acres, although in early colonial times it was nearly double that extent. The greatest depth is near the southwestern angle of the mound and is seven and a half feet. Formerly, however, the deposit must have been from twenty to twenty-five feet high.

A lime-kiln has been erected near the deepest portion of the mound, and from this point a section has been opened up across its entire lower border.

The upper margin of the deposit terminates in a thin shell-field covering hundreds of acres along the Potomac in the direction of Port Tobacco. The mound was formerly concealed by a thick stratum of earth, which withstood the plowing and cultivation of nearly two hundred years. This soil was washed down from the sloping hill already referred to.

The exposed section near the kiln affords an excellent opportunity to study the gradual growth and characteristics of the structure. Stratification cannot be said to exist at any point, although certain dusky lines seemingly indicate that the accumulation may have been interrupted at various intervals from causes not now determinable. The antiquity and enormous pressure to which the bottom of the mound has been subjected are clearly shown by the condition of the shells, which are more decomposed than those on the summit.

The shells are similar to those already noted. The remains of mammals, birds, fishes, terrapins, hard clam (*quauhaug; Venus mercenaria*) are also found. The hard clam is now no longer found in this immediate region.

Fire-places, marked by ashes, coal, bones, pottery, etc., were uncovered at several points.

Rude axes, celts, arrows, spears, knives, pottery, broken pipes, hammer-stones, net-sinkers, pestles, and scrapers are the art products brought to light by the industrious lime-burners, who were requested to note all objects discovered.

The hammers are found by thousands, but not more than one in ten shows evidence of former use.

The examples of pottery found at various depths were very rude indeed, but no coarser than specimens usually found in other fishing camps.

A careful examination of the shells found in this and other mounds discloses that two methods were employed in extracting the oysters. The first was by steaming them in an open fire until the valves opened sufficiently to admit a celt of bone, wood, or stone, by which the shells were wrenched apart and the oyster removed. That this method was adopted, or that they were steamed in covered pits, is shown by the unbroken shells, from which the oysters could not have been removed in any other manner.

The second method was by chipping away the anterior portion of the valves until an opening had been made for a celt.

No pits were found in this region, although they have been discovered on the eastern shore of the Chesapeake Bay, and also fire-heated stones by which the steam was generated.

The manner in which the Indians fished the oysters must be left to inference. In most places the river shoals gently for nearly a half mile, and in such localities the oyster-beds approach the shore so closely that they may be taken without difficulty when the tide is out. As the beds vary from six to twelve inches in depth, it seems probable that they must have been detached in masses by means of a sharpened pole. That diving for oysters was also resorted to is shown by traditions still current on the Choptank river.

As to the age of the Newburgh mound, I can only say that it is presumably pre-Columbian. The original deposit must have required two or three centuries in its formation; and as the Indians left this region immediately after the cession of their territory, in 1633–1634, its size could not have been increased after that period.

The second mound is the higher of the two and the loftiest now found on the Potomac. It rests on a sloping hillside south of the creek, near its mouth. It is also covered with earth, which nourishes a growth of cedars and brush-wood. Its greatest dimensions, so far as I was able to determine, are as follows: Length, unknown, as it

is still concealed by earth and vegetation; width, less than a hundred feet; height, so far as exposed, between eleven and twelve feet. The contents are similar to those found in the large companion mound. The shells are much cleaner and firmer, owing to their protected condition. This deposit also has been purchased by the railroad company, and the shells are being removed for ballast.

The section is on the western side. When first opened the workmen found a large earthen pot near the summit. It contained nearly a quart of arrow-heads and some other objects whose nature I was unable to learn.

This deposit yields rude axes, pottery, and hammer-stones; but no bones were observed during my repeated visits.

The following shell fields and mounds will be named in the order of their occurrence, but not described at length:

A large shell-field fronting the ruins of Blenheim Mănor, four miles south of Newburgh.

A similar deposit at Ludlow's Ferry, one mile below Blenheim. The depth of these fields will scarcely exceed an average of twelve inches.

A large shell-field at Lower Cedar Point, a mile in extent; depth, from one to four feet. The next field is one mile below Cedar Point, on the "Waverly" plantation, owned by Mrs. Hungerford. The deposit is one mile in length, one-half being on the Potomac and the remainder following the northern shore of Piccowaxton creek. It is from one to two hundred feet wide and its depth from one to four feet.

Immediately south of Piccowaxton creek is the largest shell-field on the Potomac. Its length is nearly two miles. It covers the entire front of the ancient mănor called the "Banks of the Dee," owned by Mona Lloyd, Esq. The southern portion deflects to the left and follows Cuckold's creek for half a mile. The width is from one to three hundred feet. The depth varies from one to four feet, the deepest portion being at the southern angle.

An extensive fishing camp skirts the whole inner margin of this field. This yields polished and chipped axes, celts, pestles, pipes, ceremonial weapons, and a large list of other relics.

Fronting the southern angle of the "Dee" is a shell mound situated on a reef in the Potomac about a furlong from the shore. The time selected for its examination was at low tide, when the greatest surface was exposed. I found it to be seventy-five feet long by thirty-

five in diameter, its height being about seven feet. It was about fifteen feet high early in the century, when the space between it and the shore was a reedy morass. A close examination was made, but no trace of human workmanship could be found among the shells, which were smoothly polished by the long-continued action of the water. That this deposit was reared by Indian hands there is no reasonable room to doubt, although none but circumstantial proof remains.

Situated in the mouth of Cuckold's creek is a shell-field on Simms' island. The entire area contains about two acres, one-half of which is covered with shells to a depth of one or two feet. The objects of human workmanship found here consist of hammers and pottery.

The next deposit is located on the southern shore of Cuckold's creek, on an estate called "Bachelor's Hope." The field follows the creek inland for nearly a mile, the width being from one to two hundred yards and the greatest depth nearly two feet.

The camp on the inner margin of this shell-field yielded polished celts, hammers, and fragments of pottery.

Swan Point is five miles north of the Wicomico river. It contains a thin shell-field which covers from one to three acres. The products were chipped axes, spears, arrows, hammers, and pottery.

A large mound and a very extensive shell-field are found at Lancaster on the Wicomico river two miles east of its junction with the Potomac. The mound was once about fifteen or eighteen feet high, but the demands of a lime-kiln in its vicinity have reduced its height to nine feet.

The shell-field is about three-fourths of a mile in length and yielded several interesting objects, among which was a finely wrought cup-stone and an axe of English flint, the material of which the Indian had obtained from a cargo of ballast brought over in early colonial times and abandoned in shoal water near the landing.

Other shell-fields are found above Lancaster, on the farms of Mrs. Ignatia Lancaster and Charles Lancaster, at Charlestown creek. Similar deposits are found also on the farm of Mrs. West Hatton, at Stoddard's wharf, and elsewhere at intervals as far up as Allen's Fresh, at which point the oysters cease to grow.

Shell-fields of various sizes are found also on the southern shore of the Wicomico, in St. Mary's county, the longest and most important being on the Plowden estate, called St. Clement's Manor. The entire river front of the manor is covered with a layer of shells vary-

ing from one to four feet in depth. Nothing but fragments of pottery containing shell tempering were found at this place, although it is probable that a rich camp exists in rear of the mnaor.

Smaller and less interesting shell-heaps are found at Chickahominy plantation and at other places nearer the mouth of the Wicomico.

My original opinion was that a dense population once lived in this region. I confess now that I have been compelled to modify my views in this respect. Furthermore, I am now of the belief that the importance of aboriginal oyster-fishing as an actual, *necessary* food resource has been quite overestimated. In brief, I believe that the oyster was more of a luxury than a necessity.

Cemeteries.—Burial places are difficult to find in this region, as all superficial signs have been obliterated by cultivation. A number of graves were discovered at Pope's creek subsequent to my first visit. Such crania as I could collect have been deposited in the Army Medical Museum. One skull is particularly interesting because its outer table exhibits traces of some deep-seated disease which has not yet been determined.

A second cemetery was discovered at "Indian Town," on the headwaters of the Wicomico river, but no entire crania were obtained.

About three years ago many human bones were exhumed from the great mound at Pope's creek by the lime-burners, but I was unable to learn what became of them. That the custom of burying in shell-mounds was not uncommon has been verified in distant localities on the eastern shore of the Bay, where, during my research, I learned that four bodies had been removed from the mound at Roadley Manor, two from the Bolingbroke shell-field, and one from the enormous deposit at Chancellor's Point.

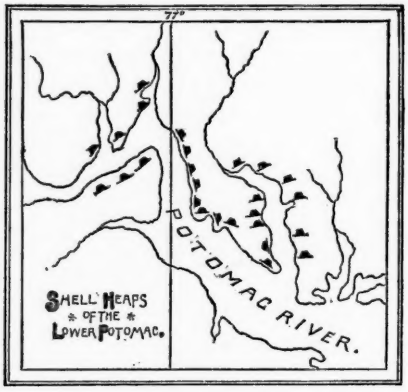
I have omitted to state that two places only have been discovered where the camps were situated on the mounds themselves. The first was at Newburgh and the second at Goose Point, on the Choptank river. Usually the camp was situated directly in rear of the shell-heaps.

Arts.—The art products are similar to those discovered in the fishing camps of the Upper Potomac. I will enumerate a few characteristic types: Very long, slender pestles, and others having a graceful central swell; bored ceremonial weapons; pierced tablets of variegated slate and porphyritic syenite; spheroids of quartzite ranging from four to six inches in diameter; pipes of stone and clay; polished

axes and celts; beads of bone, stone, and glass, the latter belonging to the so-called Venetian polychrome type. They are ovoid, of various sizes, and are beautifully colored in red, white, and green patterns.

Who were the Indians who raised the shell-heaps? They were the Wicomicoes. Of their history we know but little, and that little is in their favor. Father White, the earliest colonial missionary among these people, has given a few meager facts in his Latin *Relatio*. These I have abridged for this occasion. Their principal town occupied the present site of St. Mary's, near Cornfield Harbor. The Indians were tall and finely proportioned. Their faces were fair and pleasing when not covered with paint, which "was employed to keep the mosquitoes away." Their dress was of deer-skin. Their food was game, fish, and hominy. Their huts were made of bent poles covered with mats of woven grass and with the bark of trees. For weapons they used the bow, axe, and club. No mention is made of spears, although Father White attributes this weapon to the warlike Piscataways of the north.

The early and peaceful transfer of this territory to Europeans was due to the periodical forays of the Patuxent Indians, of the eastern border, "who came over to steal the Wicomicoe women."



Map showing distribution of shell heaps, etc., on lower Potomac.

A few descendants of the Wicomicoes still live in Charles and St. Mary's. Some claim to be full-blooded, but the majority have deteriorated by intermarriage with negro slaves. At Port Tobacco, in 1883, a so-called full-blooded Wicomico died at the advanced age of 109 years. The Indian also whom I employed to guide me to the ancient town on the Wicomico was said to be of pure native blood. His name was Swan. He was rather short, with black eyes and hair. His jaw and cheek bones were very pronounced and his skin quite swarthy. He was unable to give any account of himself beyond the fact that he was an Indian.

INDIAN TRIBES OF THE DISTRICT OF COLUMBIA.

BY JAMES MOONEY.

On a June day, in 1608, Captain John Smith left Jamestown in an open boat, with fourteen companions, to explore the waters of the Chesapeake. Entering the Bay, they crossed to the eastern shore, "and here," says Smith, "the first people we saw were two grim and stout savages, upon Cape Charles, with long poles like javelings headed with bone. They boldly demanded what we were and what we would." Having satisfied these fierce warriors of their friendly intentions, the explorers continued some distance up the Bay, and then, returning along the west shore, ascended the Potomac. But the great chief, Powhatan, had ordered the little band of adventurers to be cut off, and in consequence they found themselves received with a show of hostility at several places as they proceeded up the river; "but at Moyaones, Nacotchtant, and Toags the people did their best to content us." Going yet a little farther, they found the navigation obstructed by immense rocks spangled with mica, which glistened like gold in the sunlight as the water trickled down their sides. Having now reached the vicinity of the Little Falls, about five miles above Washington, they turned and retraced their way to Jamestown.*

This is the first authentic notice of the subjects of this paper, the Indians of the District of Columbia, the term as here used being

* The cross marked on Smith's map would seem to indicate that he went some distance farther up, but his description agrees best with the vicinity of the Little Falls. Moreover, the river at Little Falls is impassable for a boat.

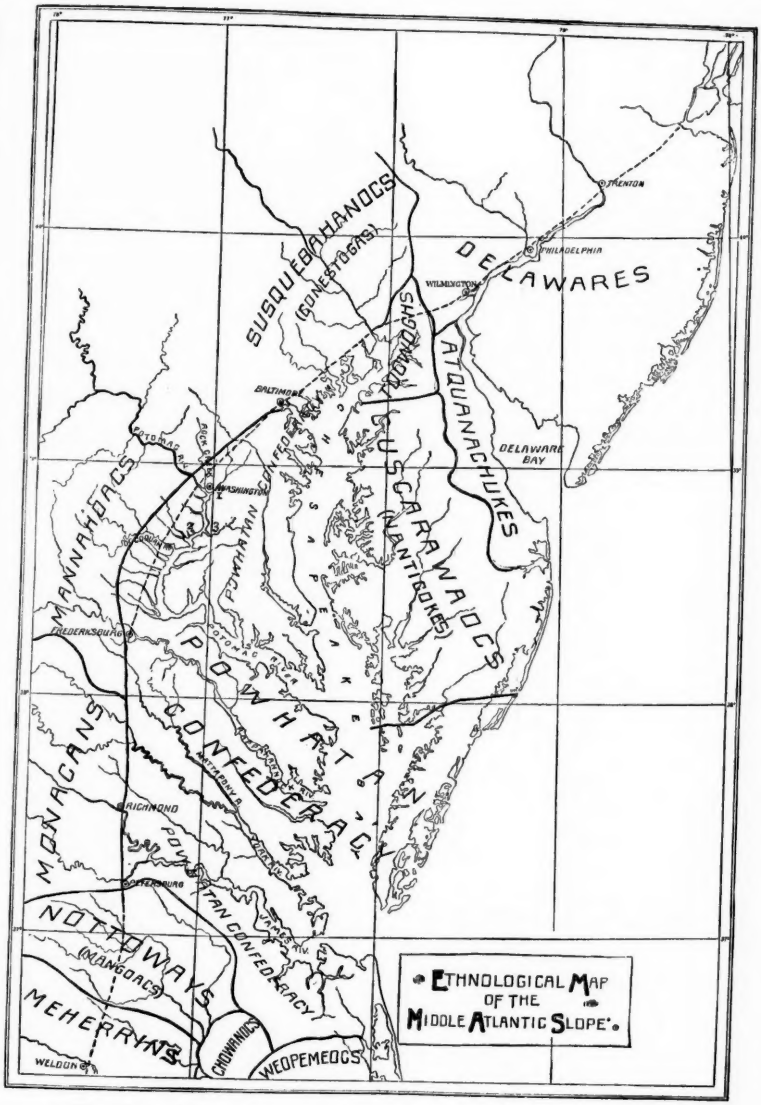
understood to include not merely the original area of ten miles square, but also the adjacent territory on both sides of the Potomac. Each of the three friendly settlements mentioned in the account was the headquarters of a distinct tribe of the same name. Toags, which appears on Smith's map as Tauxenent, was at or near Mount Vernon, seventeen miles below Washington, on the Virginia side of the Potomac river. Moyaones appears, from the same map, to have been directly opposite, on the Maryland side, just below the mouth of the Piscataway, while Nacotchtant, or Nacochtank, was on the same side, just below the Eastern Branch and within the present limits of the District.* On either side of Nacochtank was a smaller settlement, marked but not named on the map, the three forming a continuous line of fields and cabins along the east bank of the Eastern Branch from its entrance into the District to some distance below Giesboro point.

On the Virginia side, directly across the Long bridge, opposite Washington, was another small settlement, called Nameroughquena, and between it and Tauxenent (Mount Vernon) were two others, known respectively as Assaomeck (about Alexandria) and Namassingakent (below Alexandria). Several other small settlements are indicated on the map, on the Maryland side, about the mouth of the Piscataway, but none are marked on either side of the river above Washington, although archæologic researches tend to show the former existence of a considerable settlement about two miles above Georgetown and within the present limits of the District.

Nacochtank, which was the residence of a chief and contained eighty warriors, was the principal settlement within or adjoining the District. The Jesuits, who came out later with Lord Baltimore, latinized the name as Anacostan, whence we get Anacostia, the modern name of the Eastern Branch, at Washington, and of the post office at Uniontown, on its southeast bank, and perhaps also Analostan, the name of the island opposite Georgetown.

The natives were of the great Algonquian stock, and spoke the language of the Powhatan confederacy, which occupied tide water Virginia from the waters of Albemarle sound to the Potomac, and probably also the basin of the Patuxent, although the Maryland

* Bozman (History of Maryland, I, 119, 1837) thinks Toags was on the Maryland side, about Indian Point, or lower down, at Maryland Point, in Charles county, while he locates Moyaones about Broad creek, just above the Piscataway.



1. Nacochtank (Anacostia). 2. Tauxenent (Mt. Vernon). 3. Moyaones.

PLATE VII.

branch, at least after the death of Powhatan, appears to have had but slight connection with the main body. The tribes speaking this language extended inland up to the falls of the principal rivers along the great geologic boundary line marked out ages ago, as described by Mr. McGee. Below this line the broad estuaries were abundantly supplied with salt-water fish and bordered by flats of rich agricultural land. Above it the rivers rapidly dwindled to diminutive streams, in which only the smaller varieties of fish were found, while the soil was thin and poor and altogether unsuited for Indian agriculture. Thus the Powhatan tribes were farmers and fishers, dwelling in fixed habitations, while their enemies—the Monacans and Mannahoacs—living respectively on the headwaters of the James and Rappahannock, were a race of wandering hunters. To what stock these latter tribes belonged we know not. They died and made no sign, and a few local names are all that have been preserved to show that they once existed. There is a possibility that they were a part of the Siouan family now roaming over the prairies of the West.

We thus see tribal boundaries and mode of life, with the consequent tribal characteristics, determined by a remote geologic convulsion, and we may also reasonably expect to see such differences reflected in the archæologic finds. Such in fact is the case, for within the ancient limits of the Powhatans, who had their permanent settlements along the river banks, we find great numbers of neolithic implements in every stretch of bottom land, while in the hill country of the hunting tribes, who were without a local habitation, such remains are fewer and are scattered about in such a manner that it is impossible to guess beforehand where they may or may not be found.

On Albemarle sound, to the southeast of the Powhatans, were the Weapemeocs, another Algonquin tribe, differing but little from their northern kinsmen. Adjoining them on the west were the Chowanocs, Meherrins, and Mangoacs or Nottoways, southern offshoots from the powerful Iroquoian stock, whose chief seat was in central New York. On the northeast, between the Chesapeake and Delaware bays, were the Cuscarawaocs (about equivalent to the Nanticokes), Atquanachukes, and other tribes, of Algonquin lineage, and closely connected with the Delawares farther north. At the head of Chesapeake bay and extending along the lower Susquehanna were the powerful Susquesahanocs or Conestogas and their allies, the Tocwoghs, both akin to their northern neighbors, the Iroquois or Five Nations, with whom, however, they carried on a constant and desperate warfare. The lo-

cation of these tribes and of the settlements above referred to appears upon the accompanying map.

The Weapemeocs, Chowanocs, Mangoacs, Powhatans, Monacans, Mannahoacs, Susquesahanocs, Tocwoghs, Cuscarawaocs, and Atquanachukes each spoke a different language and could understand the others only through interpreters. With most of these we need not concern ourselves here, but the Susquesahanocs will be found to play an important part in the Indian history of this region. The Piscataways, afterward known as Conoys, are not mentioned under either of these names by Smith, and the name Piscataway appears to have been a collective term for several small tribes west of Patuxent, including, probably, the Moyaones, previously mentioned. The Patuxents, on the lower course of the river of that name, seem finally to have merged into the Piscataways.

The Powhatans placed their chief dependence upon agriculture, and Percy, in 1607, found on the Rappahannock "the goodliest corne fieldes that ever was seen in any countrey."* The woods also afforded abundance of wild fruits and nuts, while the marshes supplied wild rice and tuckaho, the tubers of the latter being used as bread. The tidal estuaries swarmed with fish, and the numerous shell-heaps along the lower Potomac bear witness to the abundance of oysters. Despite all this the natural improvidence of the savage kept him always but one remove from starvation, and, according to the old chronicler, his body altered with his diet in the different seasons, and he grew fat or lean, strong or weak, "even as the deere and wilde beasts."†

Fish were taken in nets made from vegetable fiber or in weirs made of the twisted stalks of reeds. They did much of their fishing in canoes, using bone hooks, or long arrows which were fastened to the end of a string and shot into the fish. The canoe was hollowed out from a poplar log, and was sometimes fifty feet long and capable of carrying forty men.

As soon as their corn was gathered in the fall they left their homes and, forming themselves into companies, went up to the hill country for their winter hunt. This brought them into collision with other tribes, and thus gave rise to constant wars. Bows and arrows were

* Percy (1607) in Arber edition of Captain John Smith's Works, LXV, Birmingham, 1884.

† Smith (1612) in *ibid.*, 68.

the hunter's implements, and there is no mention of the blow-gun, which was in use farther south.

Their houses were from thirty-five to fifty feet long and half as wide, and were made of poles bent over and fastened together at the top and covered with bark or mats. A small opening at one end served both as door and window, while another smaller hole in the roof answered for a chimney. The fire, produced by twirling a pointed stick in a hole in a block of wood, was in the center of the cabin, around the sides of which was a low platform covered with mats or skins, on which the inmates sat or lay with their feet to the fire. The furniture consisted chiefly of baskets of various sizes, mats and skins for bedding, a few pots of clay or soapstone, and a stone hatchet or two for hollowing out canoes and for other like purposes. Outside the door was a huge mortar, made from a log of wood, with a heavy stick for a pestle.

Children went entirely naked up to about the age of twelve years, while the ordinary summer dress of adults consisted simply of the breech-cloth or a short apron. To this was added in winter a mantle of deer skin or of turkey feathers neatly interwoven. These were ornamented with shells of wampum or bits of copper in the usual savage fashion. The men shaved their hair on the right side, and allowed it to hang down on the breast in a long lock on the left. From holes in the ears depended birds' claws, pieces of copper wire, or even a dead rat tied by the tail, or a small, live snake, which twined about the neck of the wearer, and at times would kiss his lips. Their bodies were painted in various patterns. About their necks were strings of pearls taken from mussels, and on their heads were feathers, snake rattles, or the hand of a dead enemy, and, in short, according to Smith, "he is the most gallant that is the most monstrous to behold."* The women tattooed their bodies, limbs, and faces, and the girls were distinguished from the married women by having their hair cut short in front and at the sides.

The life of an Indian was a routine of eating, sleeping, and dancing, when not engaged in hunting or war. Here is the picture of these children of nature as drawn by Smith: "The men bestow their times in fishing, hunting, warres and such man-like exercise, scorning to be seen in any woman-like exercise, which is the cause that

*Smith (1612) in Arber edition of Captain John Smith's Works, 67. Birmingham, 1884.

the women be very painefull and the men often idle. The women and children doe the rest of the worke. They make mats, baskets, pots, morters, pound their corne, make their bread, prepare their victuals, plant their corne, gather their corne, bear all kinds of burdens, and such like."*

War was a pastime to the savage, and the greatest skill of the warrior was expended on his weapons. Chief among these were a bow and a quiver full of long arrows headed with stone, the spur of a turkey, or the bill of a bird. He carried a knife made from a reed, and a club or tomahawk headed with a deer's horn or with a long stone sharpened at both ends. For defense he had a round target of bark. The dead were scalped, and prisoners were tortured with every device of savage cruelty.

Time will not permit a description of their amusements, their religious ceremonies, or funeral rites. Suffice it to say that the bodies of the dead were either wrapt in skins and deposited in the ground or exposed on scaffolds until the bones fell apart, when they were gathered up and preserved in the houses. The old writers say nothing of any kind of coffin.

The history of the Nacochtanks and Tauxenents is lost in that of their more powerful neighbors. After Smith's voyage up the Potomac, in 1608, we hear no more of them until 1622, when a party from Jamestown, ascending the river in quest of supplies, stopped at a settlement on the south bank, at the mouth of Potomac creek. The chief here had no corn to spare, but said that "his mortal enemies," the Nacochtanks and Moyaones, on the other side of the river, had plenty, and offered the services of fifty warriors to go and help the English take it. The offer was accepted. The white and red raiders attacked Nacochtank, and after a stubborn fight eighteen of the Nacochtanks were killed and the remainder driven from their cabins, which were then plundered and burned.† This battle was probably fought on the slopes just across the navy-yard bridge.

Passing over minor occurrences, the next important event in the history of these tribes was the arrival of Lord Baltimore's colony on the Potomac in 1634. The Catholic missionaries who accompanied the expedition soon won the hearts of the simple-minded natives, who gladly accepted their teachings, and the chief of the Nacoch-

* Smith (1612) in Arber edition of Captain John Smith's Works, 67. Birmingham, 1884.

† Bozman, J. L. History of Maryland, II, 567. Baltimore, 1837.

tanks—called by the missionaries Anacostans—even expressed his desire to live among the whites and become one of them; but this lasted not long. The cupidity of the traders and the encroachments of the settlers led to reprisals, resulting finally in a condition of chronic warfare, in which, as usual, the Indians were the greater sufferers.

On the arrival of the English in 1634 they found the tribes along the whole Lower Potomac and Patuxent living in constant dread of the Susquesahanocs at the head of the Bay, whose incursions had become so frequent and destructive that the weaker tribes had already begun to abandon their settlements for a more secure position farther up the Potomac. The Susquesahanocs continued their inroads upon Indians and whites alike until 1652, in which year a treaty was made, only to be broken again in 1676, when the pressure of the terrible Iroquois on the north drove the Susquesahanocs themselves from their ancient homes and forced them down upon the frontiers of Maryland and Virginia, which they ravaged from the Patuxent to the James, until defeated and almost exterminated by Nathaniel Bacon in a decisive battle at the present site of Richmond. The result was a treaty of peace in 1677, by which all the Indians as far as the head of Chesapeake bay were brought under tribute to the whites.

Between the upper and nether mill-stones the original proprietors of the Potomac region had been well nigh ground out of existence, and the miserable remnant was still pursued with unrelenting hatred by the conquering Iroquois. The Tauxenents joined the few survivors of the Virginia Powhatans, who retired to the Pamunkey river, where about fifty mixed-bloods still remain, about twenty miles east of Richmond. The Maryland tribes gradually consolidated under the name of Piscataways, and removed, about the year 1700, to a new settlement on the lower Susquehanna, near Bainbridge, Pa. Here they became known as Conoys, and under this designation they afterward moved higher up the river and settled at Chenango, under the protection of the Iroquois, about 1740. In 1765 they numbered only about 150 souls. Still later they removed to the Ohio valley, where they joined their kindred, the Delawares. They made their last appearance as a separate tribe at a council held at Detroit in 1793.

While on a visit to the Cherokee reservation in North Carolina in the summer of 1887, the writer accidentally obtained some additional information which has never before appeared in print and which illustrates in a striking manner the shifting fortunes of the aboriginal tribes.

A young Cherokee named Samson Owl had married a woman of the Catawbas, once a powerful tribe, but now reduced to a feeble remnant of about a dozen families, living on the river of the same name in South Carolina. In talking one day with this woman about her own people she mentioned that a number of Indians formerly lived with them who were different from the Catawbas, being of a very surly disposition, and were called "Pamunks." On further questioning she stated that they were all descendants of, or related to, an Indian named John Mush, who had come from Virginia about fifty years before. They were unquestionably some of the Pamunkeys, already mentioned as still existing near Richmond. On asking what had become of them she said that they were constantly quarreling with the Catawbas—for the old tribe hatred still lives on—until some Mormon missionaries from the West arrived in that vicinity a few years ago, when the "Pamunks," glad of an opportunity to escape from their persecutors, embraced the new doctrines and followed their deliverers to the far-distant land of Utah, where the last descendants of the lordly Powhatans now read their lonely destiny in the waters of the Great Salt Lake.

The preceding papers were read before the Society at its regular meeting, April 13, 1889.

DISCUSSION.

Prof. F. W. PUTNAM, of the Peabody Museum of American Archæology and Ethnology, Cambridge, Mass., responding to a request from the Chair, spoke substantially as follows:

I have listened with much pleasure to the several instructive papers which have been read this evening, and I am pleased to find myself among so many earnest workers. There is certainly no other place in the country where there are so many anthropologists actively engaged in research as here in Washington, and I must congratulate this Society upon its success, and particularly that its members have taken such an interest in local archæology. The papers to-night have shown how much there is to be done before we can fully understand the archæology of the Potomac valley. Mr. McGee has told us of the possibilities of the great antiquity of some of the objects exhibited to us this evening, and Mr. Wilson has called our attention to the fact that many of the implements found on the surface of the hills along the valley are of rude forms similar to those found in the glacial gravels. Mr. Proudfit has given us the results of his

examination of several old village sites and shown us that rude implements of paleolithic forms are commingled with neolithic or unquestionable Indian implements and ornaments. Mr. Reynolds has given us an account of his examination of the shell-heaps, the refuse-piles of the Indians during their more or less extended stay further down the valley, and Mr. Mooney has told us of the Indians who were here when this beautiful valley was first invaded by our own race. We have thus had as fair a presentation of the past as the known facts will permit, and the subject is fairly open for discussion, while there is a strong incentive for further and more systematic work, which I have no doubt will follow.

I may be permitted to state that all your problems seem to me to be identical with those which have long engaged my serious attention in New England. Similar shell-heaps, village sites, and places of manufacture occur there as here, and rude implements chipped from pebbles occur in special places there as they do here. The Piney Branch and Chain Bridge workshops here are of the same character as those of Marshfield and Wakefield, in Massachusetts, where rude implements in various stages of manufacture and in great numbers are found associated with chips and broken stones. As every perfectly chipped implement of the knife, spear, or arrow kind had to pass through all the stages noticed in these rude forms before the perfect implement was obtained, and as on many village sites which I have explored I have found nodules, chips, and rude implements of paleolithic forms associated with the highest type of chipped implements, with ornaments, and with pottery, I have been led to the belief that form alone can tell us but little of the time when an implement was made. It seems to me that all we can go by in this country is the fact that up to this time the implements found in the Eastern gravels are all of rude forms, very closely corresponding with those actually found in similar gravels in the Old World.

We have this ground for assuming that the people living on the Atlantic coast during the ice age and at its close had not reached the art of chipping stone into the delicate shapes which those of a later time attained to in the same region. While we can thus assume that all implements of this early period were of simple forms, we have so many facts showing that implements of similar forms were made in later times that we are not warranted in considering all rude implements as paleoliths, if by that term we mean implements first in time as well as in form. Certainly this is shown by the collection exhibited by Mr. Proudfit from an unquestionable village

site where he has found the rude and unfinished implements and the long, slender points chipped from the same kind of stones associated with polished implements, such as celts and hatchets, and also ornaments and pottery. In such a collection there is no evidence that one implement is older than another, and we seem to be forcing the facts when we make selections from such a place. From all I have heard about them, the hillside at Piney Branch and similar places seem to have been for centuries great sources of supply of proper materials from which implements were chipped by the people who lived along the valley. It is now for Mr. McGee to ascertain beyond doubt if the chipped stones found at those places date back to the glacial period, as he has intimated may be the case.

The instructive exhibition given by Mr. Wilson shows us how rude implements are scattered over the surface of the country, and many of them are unquestionably of great geological age; but for the reasons I have stated I must differ from my friend in the estimate of the value of form alone in indicating their age. In the museum at Cambridge I have arranged together as paleolithic implements only those unquestionably from the glacial gravels; but we also have there a remarkable collection found by Mr. Cresson in a rock-shelter in Delaware. In this shelter were several distinct layers or deposits, showing that the place had been successively used by man, and it is remarkable that in the lowest deposit all the implements are rudely chipped from argillite and closely resemble those found by Dr. Abbott in the Trenton gravel. This shelter gives an indication of successive periods in the development of the art of stone-chipping, which will prove of great importance in the study before us, and it is from such collections that we shall be able to determine the points at issue. Are there not similar places in the Potomac valley that will tell the story here? Systematic work is now required everywhere. It is no longer enough to pick things up on the surface. The shell-heaps should be examined inch by inch by vertical sections; the village sites should be systematically dug over; the ancient burial places in the valley must be found and explored, and a section should be made of the hillside at Piney Branch to see what is below the chipped stones on the surface. When these examinations have been made, as I have no doubt they will be, by the members of this Society we shall be able to read correctly the archæology of the valley, which has unquestionably been inhabited for a long period of time, and perhaps by predecessors of the people we know as the historic Indians.

BOOK NOTICES.

The Sixth Annual Report of the Bureau of Ethnology.

The Sixth Annual Report of the Bureau of Ethnology to the Smithsonian Institution, covering the fiscal year of 1884–'85, and bearing the imprint of 1888, will soon be ready for distribution. A brief introduction by the director, Major J. W. Powell, prepares the way for the special monographs, which will be noticed in their order in the volume.

Ancient art in the province of Chiriqui, Colombia, by William H. Holmes, pp. 3–188, map and 285 figs.

The province of Chiriqui is the narrowest strip of the Isthmus of Panama, and, although belonging to South America, occupies one of those strategic areas which, in addition to its own culture, absorbed a great deal from countries on either side. The metal, stone, and clay productions of the region are faithfully studied in this paper, especially on the side of form and decoration, for which the tastes and education of the author have specially qualified him.

The most instructive lesson is the study of conventional decoration in its origin and elaboration. In a series of figures (257–283) Mr. Holmes skillfully analyzes representations of an alligator, tracing its delineation from the recognizable natural form through more and more highly conventionalized forms till without the connecting series the figures would reveal no hint of the underlying design. In this way he has pointed the way for the study of all the ancient ideographic writings.

In the author's own words, he has shown that the elements of decoration flow into the ceramic art chiefly through two channels—the one from art, the other from nature. All decorations may therefore have four dual classifications: First, with reference to the mode of realization, as plastic and flat; second, with reference to derivation, as mechanical and imitative; third, with reference to plan of manifestation, as geometric and non-geometric; and, fourth, with reference to the association or ideas, as significant and non-significant.

A study of the textile art in its relation to the development of form and ornament, by William H. Holmes, pp. 189–254, figs. 286–358.

In this paper the author follows up in a more comprehensive manner the fundamental principles of what may be called the Washington school of anthropologists—that is to say, he assumes a highly organized industry as the finished result of a long series of inventions, all which had their beginning in a slight modification of natural objects.

In their bearing upon art, textiles are to be studied chiefly with reference to three grand divisions of phenomena—the first, *constructive;* the second, *functional;* the third, *æsthetic.* The last class, with which this paper has almost exclusively to deal, is composed mainly of what may be called superconstructive and superfunctional features of the art, and includes three subdivisions of phenomena connected respectively with (1) form, (2) color, (3) design.

"In America there is a vast body of primitive, indigenous art having no parallel in the world. Uncontaminated by contact with the complex conditions of civilized art, it offers the best possible facilities for the study of the fundamental principles of æsthetic development.

"The laws of evolution correspond closely in all art, and if once rightly interpreted in the incipient stage of a single, homogeneous culture, are traceable with comparative ease through all succeeding stages of civilization."

There is much careful work in this paper, and the young anthropologist would do well to read with pencil in hand, noting the technical terms and their application.

Aids to the study of the Maya Codices, by Prof. Cyrus Thomas, pp. 253–372, figs. 359–388.

Professor Thomas commences his paper with the modest admission that the Maya Codices cannot be proved to contain true alphabetic characters, though some of the glyphs or signs are phonetic symbols. The further statement is made that Landa's alphabet is based on a misconception of the Maya graphic system.

After presenting a very interesting report on the fortunes of the Dresden Codex he proceeds, on page 269, to discuss the numeral signs and the ideographs. The problem of order in the sheets is somewhat as follows: Suppose you were to write a letter of twenty-four sheets, turning each face downward as you finished, then were to commence on the back of 24 and write until you came to the

beginning; then suppose you were to write another letter of fifteen pages and go over the backs in the same way. Now, in time these letters are found by somebody who cannot read them, and the sheets get displaced. Do you not see what a terrible perplexity Professor Thomas would be in to trace backward the history of this document and get the parts in proper collocation?

The problem is not even so simple as this. In the Manuscript Troano and in the Dresden Codex Prof. Thomas has brought together all that he has discovered and all that is known with reference to the order of signs, believing that the discoveries made will throw considerable light on this difficult subject and limit the field of investigation relating to the signification of the Maya Codices. It may be that we shall never be able to read the Maya hieroglyphs; but one thing is certain, it is better to be sure of your ground and to go a little way than to plunge rashly into a bog.

Osage traditions, by Rev. J. Owen Dorsey, pp. 377–397, fig. 389.

Mr. Dorsey has the advantage over a great many of our philologists in that he is acquainted with the language about which he writes. The result of this familiarity has wrought a great change in our knowledge of aboriginal language, sociology, and religion. The plan of Mr. Dorsey has been to collect hundreds of stories from members of the Siouan stock and to compare them, to inquire minutely into the secret orders which traverse the totemic system in order to find the way out of matriarchy into patriarchy, and, finally, to connect the religious customs of the people with their social order. In each case the story is given in the original, with interlinear translation, and afterwards the story is printed in lines to correspond with the lines of the original text.

It is shown clearly that the admission of the existence of secret orders or "Mysteries" was not in any case made until the narrator ascertained that Mr. Dorsey was already familiar with some of the secret rites; and these admissions were always made in the absence of the interpreter.

The Central Eskimo, by Dr. Franz Boas, pp. 399–675, figs. 390–546, pl. ii–x.

In the divisions of the Eskimo adopted by the National Museum the area explored by Doctor Boas is that numbered 3, familiar to the reader as the arena of Captain Hall's journey in 1860–1862, and bounded by Cumberland sound and Davis strait.

Selecting a definite location in which the author has lived famil-

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iarly with the natives for more than a year, his task is to place before the reader the distribution of tribes in Baffin land, West Hudson bay, Boothia Felix, Back river and Smith sound; to trace the influence of geographical conditions and intercourse with the outside world, and then to describe their daily life in hunting and fishing, manufacturing, traveling by land and by water, habitations, and clothing. After this the author devotes much space to that side of the Eskimo culture which has a great charm for him, namely, the social and religious life, the tales and traditions, their science and arts. Accompanying this paper is a glossary and an excellent bibliography.

For comparative purposes this ethnographic monograph leaves little to be desired. As soon as other areas can be similarly treated we shall have a body of material second to none in the world for comparative purposes.

O. T. Mason.

Twenty-second Report of the Trustees of the Peabody Museum of American Archæology and Ethnology. Vol. iv., No. 2.

In the report of the curator the welcome announcement is made that a large wing 60 feet square has been added to the already crowded building, five stories high, having workshops and laboratory, lecture-room and office in the lower stories, and exhibition space in the upper portions. The plan of arrangement for the material adapted is chorographic or ethnographic, the two methods not conflicting practically. The greatest importance is attached to material gathered under the supervision of the curator, and desultory specimens are used either to fill lacunæ, where their function and locality may be ascertained, or they are made to illustrate subsidiary problems.

During the year reported 2,107 entries were made in the catalogue, covering several thousand specimens. Among the specimens added were three crania of small size and remarkable form, which there is considerable evidence to show belonged to the palæolithic people of New Jersey.

On the Winthrop Branch of the Revere Beach and Lynn railroad, in the town of Winthrop, an old Indian burial place has been found, from which was taken an interesting cranium that had been covered

by a broad piece of copper, the action of which had been to preserve both the skull and the textile wrapping.

Much space is given to the discovery by Mr. H. T. Cresson, of Philadelphia, of "the first indication in North America of anything even remotely resembling the cranoge-like structures of the European bogs.

In this report the announcement is made that a new series of publications are to be issued by the museum, styled "Archæological and Ethnological Papers of the Peabody Museum." The first of the series is a paper by Mrs. Zelia Nuttall, giving the results of her investigations relating to an elaborate piece of feather-work which was sent from Mexico at the time of the conquest, probably by Cortes himself, and is now preserved in the Imperial Museum of Vienna.

The library system of the Museum is most excellent. In addition to the books collected in the Museum building there is a card catalogue of all books in the Harvard Library bearing on anthropology furnished in duplicate by Mr. Winsor.

The closing pages of the report are devoted to an enthusiastic report of Mr. Putnam's researches in the Serpent Mound.

The writer of this note has recently spent a few days in the Peabody Museum trying to acquire a just appreciation of the *genus loci*. Everywhere are immediately obvious the painstaking dissection, the nice discrimination, and fine anatomical skill of the elder Agassiz. One is prepared beforehand to hear the curator say, "When I was a pupil of the great anatomist he required the most conscientious attention to the minutest particulars." The Peabody Museum excels in this particular, and when the new halls shall be properly installed they will exhibit an unique series of mound, cemetery, and shell-heap dissection for future study.

O. T. Mason.

Notes on the Indian Tribes of the Yukon District and Adjacent Northern Portion of British Columbia, by George M. Dawson (Reprinted from the Annual Report of the Geological Survey of Canada, 1887).

Twenty-three printed pages contain the result of Mr. Dawson's investigations among the Indians of the Yukon district, but the value of the information they contain is not to be estimated by their number. The report is of great value, particularly from the light it

throws upon the geographical position of the tribes, their names and relationship.

The region treated is of peculiar interest, being practically a *terra incognita*, so far as exact information of its tribes is concerned, as it lies between the area treated by Tolmie and Dawson in 1884, and to the south of that made familiar by Dall's publications.

Though little time was enjoyed for a study of the tribes, many valuable facts and observations are recorded. As was to be expected, a marked contrast of habits and mode of life was noted between the coast and inland tribes, a contrast coincident with radical differences of language. A notable exception to this rule appears in the case of the Tagish of the Lewis Basin, who, having been called "Stick Indians," which is practically equivalent to Interior Indians, have been supposed to be a branch of the Tinné, whereas they now prove, as is evinced by their language, to be a segment of the Thlinkit of the coast. This is the most important single discovery made.

That the extension of the coast tribes inland is by right of conquest, and probably a recent one, would seem to appear from the fact that the limits to the territory of the Tahltan (Tinné) and the Stekine (Thlinkit) are still in dispute. The latter claim certain inland salmon fishery and berry grounds, the chief value of which is due to the fact that the dry atmosphere of the interior permits the curing of fish and berries for winter's use—a thing impracticable in the humid atmosphere of the coast.

Indians entertain a much stricter idea in regard to territorial rights than is commonly supposed, and Dawson records that the Indians from the mouth of the Nass, who work in the gold mines near Dease lake, though they may kill beaver for food, are obliged to make over the skins of these animals to the local Indians. A similar fact is recorded by Ramsay, in his Annals of Tennessee, of the Cheroki delegates at Albany, who turned over to the Iroquois the skin of a deer they killed north of the Tennessee, thereby conceding the latter's claim to the region by conquest. Other similar instances might be cited.

Mr. Callbreath contributes some interesting details concerning the Tahltan Indians. Among other facts, he notes that "the half-breeds are more like the father, and three generations where the father is in every case white seem to obliterate all trace of Indian blood." It would be interesting to know the nationality of the father in such cases. The French Indian half-breeds in Minnesota appear to re-

tain the characteristic Indian type a much longer period, and instances can be cited in which the Indian type is plainly visible in the fourth generation.

Some interesting details are given regarding the laws of inheritance and the kinship system. The Tahltan appear to practice "mother rite," as do the majority of Indian tribes; but the testimony offered is in part self-contradictory.

The curious way in which what we regard as natural laws are held in abeyance or set aside at the demands of the clan system is well exhibited by an instance cited, where a rich Indian would not go out or contribute to send others out to search for his aged and blind father, who was lost and starving in the mountains. Not counting his father as a relative, he said, "Let his people go and search for him."

Short vocabularies of the Tahltan, Titshotina, and Tagish complete the report.

H. W. HENSHAW.

La Haute Guyane (Upper Guyana), by Henri Coudreau; Revue d'Ethnographie, Paris, Sept.–Oct., 1888.

This article contains much of interest other than ethnographic. The locality first discussed is in the vicinity of the River Maroni, boundary between French and Dutch Guyana. The blacks here are in a prosperous condition, owing to the very large amounts of money which they earn as canoemen, carrying goods and persons through the gold country.

Previous descriptions of these blacks need correction. The names of the tribes, composed of refugee slaves and their posterity, are Paramancas, Youcas (Boschs), Poligoudoos, and Bonis. Their villages are numerous, but very small, mostly composed of cabins in a chicken-coop style of architecture.

The Grand Man (tribal chief) of the Bonis is described as "wearing clothes, drinking wine, and affecting airs of monogamy since his friction with our civilization."

There are 1,545 refugee blacks in this territory, 1,040 on French soil proper.

The Youcas, who constitute the most laborious and law-abiding element, are increasing.

The following are translated extracts of M. Coudreau's account:

"The governmental mechanism with the Bonis and Youcas comprises three pieces of machinery—the Grand Man, the Grand Council, the Captains. The dignity of the Grand Man is for life, but not hereditary. The Captains choose the new chief. The Grand Man cannot, during his life, choose his successor; but, whatever he may do, cannot be removed from office.

"The Grand Man is captain of the chief village. It is he who nominates the captains, to whom he gives his orders. Among the Youcas the Grand Man sends his captains to Surinam after he has chosen them. They receive from the government a kind of investiture, consisting of a cane, a costume, and a diploma. Among the Youcas these captains are twelve in number. Among the Bonis a single captain has received the investiture from the Governor of Cayenne. . . . The Grand Man not only chooses his captains, but one may not refuse that dignity when offered.

"The Grand Man assembles the Grand Council. The Grand Council, to-day almost fallen into desuetude, had but a deliberative voice. . . . Among the Bonis to-day all is in disorder. Among the Youcas the ancient rules are quite well observed. Among the Bonis, as among the Youcas, there is but one captain to a village; one captain at times commands several villages.

"The Grand Man has in reality only a judiciary authority. Penalties must be applied according to the law of retaliation; whoever has shot, sabred, or knifed any one is himself knifed, sabred, or shot in the corresponding part of his own body. Theft is punished by fines. No prison exists; the bar of justice only is used. Scuffles and fights are not prosecuted.

"The tendency among the Bonis is to have everything passed upon in little especial councils. On all sides, at every step, they hold council with or without a captain to preside."

M. Coudreau continues here with geographical, commercial, and political considerations of Guyana. A description of the indigenes, whose number is estimated at twenty thousand, is taken up at considerable length. After an enumeration of tribes belonging to two great families—the Carib and the Tupi—M. Coudreau describes their customs while attacking several popular misbeliefs. He says:

"Individual property is perfectly constituted among the Indians. They are laborious and sedentary. The clearing is the basis of property. It is always individual. Each one works for himself.

"The clearing would be perfectly transmissible, but hereditary transmission has no occasion to be exercised, the villages and clearings being always only ephemeral, on account of the imperious necessities of fishing and hunting in a society having no domestic animals."

Each man makes at least one clearing; some, especially chiefs, have more. Clearings are often deep in the forest.

The Indians are hospitable and helpful one to another. They have so little intercourse with the whites and transportation facilities are so limited that their produce is merely for their own consumption, not for trade. The man's duties are building, hunting, fishing, clearing, cultivating, and harvesting. In cultivating and harvesting he is assisted by the woman, who has for her duties providing fuel and making pottery and fabrics, besides cooking and the care of children.

Says the writer: "The division of property between husband and wife, even, is well marked; if a woman leave her husband she departs in possession of all her goods.

"Their political state gravitates around two words—the Tamouchi, the Peïtos.

"The tamouchi is the *paterfamilias* of the Roman gens, the peïtos are the clients. One is born tamouchi if one be eldest son of a tamouchi, for heredity is exercised in direct line. One becomes tamouchi if one be chosen as successor by a tamouchi who has no male posterity; and again, in creating a village, for example, if one has many daughters and consequently many sons-in-law who become peïtos. One can cease to be tamouchi in marrying the daughter of a tamouchi and going to live with her father, which is the custom. In this country one is always the peïto of his father-in-law. A tamouchi can become peïto while remaining tamouchi if, in marrying the daughter of any one, tamouchi or not, he continues to dwell in his own village. In the same way the peïto who makes a village becomes tamouchi while remaining peïto of his former patron.

"One is born peïto; one is peïto of the patron, tamouchi or not, of whom one's father is patron. One becomes peïto by marriage, every son-in-law being peïto of his father-in-law.

"One makes himself peïto of the man whose wife one covets; one works for the husband, one uses the woman; the husband shuts his eyes, the wife does not complain, every one is content.

"Tamouchis and patrons readily steal their peïtos. Let us say

that I have some women at hand—daughters, nieces, orphans. I attract to me the peïtos whom I covet. I distribute my women, and these peïtos cease to be the peïtos of my neighbor to become mine. The obligations of the peïto are not heavy. He is required to obey when his patron commands him to go a hunting, a fishing, to clear and burn new clearings, to clean up old ones, to cut paths, to undertake commissions, to accompany travellers; but he is not required to cultivate the clearing of his patron. He has, besides, his clearing, the products of which his patron has no right to touch.

"The peïto, far from being a slave, is treated like a younger member of the family. With age he comes to have peïtos himself and to become a patron. It is, besides, always lawful for him to leave the village and go and make his hut and clearing farther away. He would be the tamouchi of his village of one hut.

"The tamouchi presides at fêtes. He has in reserve a great collection of feather ornaments for the grand dances. It is he who has the custody of these ornaments, which, when the day comes, he lends to the peïtos of the village and even to tamouchis less well equipped. The peïtos make only little ornaments for the dance, which remain their personal property. The collection of grand ornaments passes from father to son, and thus finally comes to fall into the hands of a peïto. It is rarely that the Indians consent to sell it. This family collection—the sole object which Indian heredity bequeaths, the goods of every one being burned with the cadaver—ends by being burned with the cadaver of a proprietor dying without male posterity."

In former days there was a general tribal chief—the Yapotoli. But few of these remain, yet the Indians declare that they would like to have the institution re-established by the French government.

P. TRACY.

The Indians: Their Manners and Customs. By John McLean, M. D., Ph. D. (Robin Rustler). With eighteen full-page illustrations. Toronto. William Briggs, 1889. 16mo, pp. x, 351.

In this little volume the writer embodies the experiences of nine years spent as a missionary among the Blackfeet of the Saskatchewan, in British America. He describes in a popular manner the varied phases of Indian home life, with the ceremonies and customs relating to war, marriage, death, hunting, and medicine, par-

ticularly of the tribes with whom he is personally acquainted, who are among the most primitive Indians on the continent. While of no great scientific depth, the book is of just the character to interest the general reader who wishes to get an idea of the Indian as he is. The author has no prejudices or theories to bolster up, but describes things as he finds them, and shows clearly that the Indian, while not the hero he has sometimes been painted, is yet a man with all the possibilities of manhood and quick to appreciate honest treatment. The chapter on "The Indian Problem" is worthy a careful reading. That on Indian literature is a good summary of what has been done in the way of translations and syllabaries from the time of the early Spanish missionaries down to the present day. It may surprise many to learn that three distinct syllabic alphabets are now in use among the North American tribes, viz., the Cherokee, the Cree, and the Tukuth of Alaska, besides which we have the Micmac hieroglyphs in Nova Scotia.

JAMES MOONEY.

The following is a translation of a circular recently received, relating to the Anthropological Congress to be held in Heidelberg:

HEIDELBERG, *May*, 1889.

62d Assembly of German Naturalists and Physicians, at Heidelberg, September 17–23, 1889.

By request of the managers of the 62d Assembly of German Naturalists and Physicians we have undertaken the preparation for the sessions of the section for ethnology and anthropology (section 8), and have the honor hereby most earnestly to invite *co-workers* to take part in the proceedings of this section. We would request at the same time that announcements of papers and treatises be sent in at an early date. The managers intend to send out a general invitation, in the middle of July, and, should it seem desirable, to publish in the same connection, at least in part, a prospectus of the sessions of the section.

Prof. CASPARI,
Secretary, Leopoldstrasse 31.

Professor AUGUST EISENLOHR,
Chairman of Introduction,
Heidelberg, Neuenheimer Landstrasse 36.

NOTES AND NEWS.

INTERNATIONAL CONGRESS OF PREHISTORIC ANTHROPOLOGY AND ARCHÆOLOGY.—A program of the tenth session of this congress, to be held in the halls of the College of France, at Paris, from the 19th to the 26th of August, 1889, is issued, signed by Professor A. de Quatrefages, as president, and Dr. E.-T. Hamy, as general secretary of the committee of organization. The following points are of special interest:

All persons interested in the studies indicated may take part in the sessions by giving their names in full, titles, and residences, and upon payment of the dues, 12 francs, to the treasurer, Baron de Baye, avenue de la Grande-Armée 58. Requests for information should be addressed to the above-named general secretary, rue de Lübeck 40. The treasurer's receipt entitles to a ticket of membership and to all the publications. Excursions will be organized. The French language only will be used in the verbal communications during the sessions and in the published report of proceedings and memoirs.

The following "questions" or subjects for discussion are proposed by the committee:

I. The cutting out and filling in of valleys, the filling in of caves, in their connection with the antiquity of man. II. The periodicity of glacial phenomena. III. Art and industry in caves and alluvial formations. The value of paleontologic and archæologic classifications applied to the quaternary epoch. IV. The chronological relations between the ages of stone, bronze, and iron. V. The relations between the "civilisations" [culture stages] of Hallstadt and of the other Danubian stations, and the "civilisations" of Mykene, Tiryns, Hissarlik, and of the Caucasus. VI. Critical examination of the quaternary crania and bones noted during the last fifteen years. The ethnic elements belonging to the several ages of stone, bronze, and iron in central and western Europe. VII. The ethnographic survivals capable of affording light on the social state of the primitive populations of central and western Europe. VIII. To what extent the analogies of order derived from archæology or ethnography can allow a hypothesis of prehistoric relations or migrations.

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